UKR Journal of Education and Literature (UKRJEL)
Homepage: https://ukrpublisher.com/ukrjel/
Email: submit.ukrpublisher@gmail.com
Volume 2, Issue 6, November-December 2026 ISSN: 3107-8672 (Online)

Teachers' Perception of AI-based Assessment Tools and their Influence on Teaching and Learning in Secondary Schools in Hong Local Government Area, Adamawa State, Nigeria

Valada ALEX[1] & Simon KYELIMI[2]

Department of Educational Foundations, Faculty of Education, Adamawa State University, Mubi, Adamawa State, Nigeria

***Corresponding Author**: Valada ALEX

DOI: *https://doi.org/10.5281/zenodo.24217110*

Article History

Original Research Article

Received: 13 September 2026

Accepted: 20 October 2026

Published: 14 November 2026

Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial **4.0 International License (CC BY-NC 4.0),** which permits non-commercial use, sharing, and reproduction in any medium, provided the original author(s) and source are appropriately credited.

Citation: Valada ALEX & Simon KYELIMI. (2026). Teachers' perception of AI-based assessment tools and their influence on teaching and learning in secondary schools in Hong Local Government Area, Adamawa State, Nigeria. UKR Journal of Education and Literature, 2(6), 42-48.

Abstract

This study was carried out to investigate teachers' perception of AI-based assessment tools and their influence on teaching and learning in public senior secondary schools in Hong Local Government area, Adamawa State. The study adopted a descriptive survey research design. Three research question were raised and three research hypotheses were formulated to guide the study. The population of the study consist of all public senior secondary school teachers, with a sample size of 300 teachers selected using simple random and stratified sampling techniques. Data were collected using an adapted structured questionnaire titled "AI Perception and AI Assessment Utilization Scale (AIPAUS)" The instrument was validated by experts and trial tested to ensure its reliability using Cronbach Alpha. The reliability coefficient obtained was 0.82 which was found reliable for the study. Data were analyzed using mean, standard deviation, Pearson Product Moment Movement Correlation and t-test. Finding from hypothesis one revealed a significant positive relationship between teachers' perceptions of AI-based assessment tools and teaching effectiveness ($r = 0.642$; $p<0.05$); finding from hypothesis two revealed a significant positive relationship between teachers' perceptions of AI-based assessment tools and student learning outcomes ($r = 0.589$; $p < 0.05$); finding from hypothesis three revealed no significant difference in the perceptions of AI-based assessment tools among teachers based on gender ($t = 1.25$; $p > 0.05$). The study concluded that AI-based assessment tools play a significant role in improving teaching and learning processes. It was therefore recommended that; governments and school administrators provide adequate training, infrastructure, and policy support to enhance AI integration in education; school administrators should organize regular workshops, seminars, and professional development programmes to improve teachers' competence in the use of AI-based assessment technologies; government should improve internet accessibility and digital connectivity in public schools, particularly in rural areas.

Keywords: *Artificial Intelligence, Teachers' Perception, Assessment Tools, Teaching Effectiveness, Learning Outcomes, Nigeria.*

Introduction

Artificial Intelligence (AI) is increasingly transforming educational systems globally, particularly in teaching, learning, and assessment practices. AI-based assessment systems utilize machine learning algorithms and intelligent platforms to evaluate student learning, provide real-time feedback, and personalize instruction. In Nigeria, AI adoption in education is gradually gaining momentum. Technologies such as adaptive learning systems, automated grading tools, and intelligent tutoring systems are becoming integral to instructional processes. These innovations enable personalized learning experiences, improving student engagement and academic outcomes (Birma et al., 2025)

Traditional assessment methods in Nigerian secondary schools have long been criticized for emphasizing rote

memorization rather than critical thinking. AI-based assessment addresses these limitations by providing continuous feedback and individualized evaluation. Studies indicated that AI significantly enhances student engagement, comprehension, and academic achievement (Ubabudu, 2025). Despite these advantages, challenges such as inadequate infrastructure, digital inequality, and insufficient teacher training limit the effective integration of AI in Nigerian schools.

AI-based assessment refers to the use of intelligent technologies to evaluate students' learning outcomes. These systems automate grading, provide immediate feedback, and adapt assessment tasks based on learners' abilities. In Nigeria today, AI tools are increasingly used to improve assessment accuracy and efficiency. The system helps to reduce teacher's workload and enhance the reliability of evaluation processes (Agbarakwe & Chibueze, 2024). AI enhances teaching effectiveness by providing data-driven insights into student performance. Therefore, through the use of AI, teachers can easily identify learning gaps and tailor instructional strategies accordingly.

Studies shown that AI integration improves pedagogical practices and supports innovative teaching approaches. For example, in study by Abubakar et al (2024) revealed that AI enhances learning experiences despite challenges such as technical issues and limited training. A study conducted by Oduma et al (2025) shows a significant relationship between AI usage and students' assimilation and academic performance. Ngonso et al (2025) in their survey study involving 509 students reported that AI tools improve understanding, engagement, and learning outcomes. The study on Artificial Intelligence (AI): perceptions and uses of AI technologies in educational assessments in Nigerian Universities by Ibrahim et al. (2024) with 3,083 university lecturers showed that concerns about academic integrity had an impact on the perceptions of the use of AI in university assessment. The study also confirmed the significant effect of teachers' perception of innovative assessment on their use of various AI tools for education assessment. It also identified links between the attitudes of university teachers on the use of AI and their willingness to tailor the use of AI tools at university level. Likewise, Onaghise (2025) in his study on the perceptions of Education students regarding the use of AI tools in the University of Benin showed that the students generally have positive attitudes towards the use of AI tools and found that these tools have some benefits for them such as using it for research writing, preparing presentations, accessing of information etc. Another study by Ouahouda et al. (2025) explored the perceptions of pre-service teachers regarding AI in education, particularly in relation to gender and age, examining the views of future teachers and the use of algorithms in primary schools, revealed that there were significant differences in perceptions of AI as related to gender and age. Moreover, Akinbuwa (2025) carried out a study on teachers and students' perceptions of the use of Artificial Intelligence (AI) tools for academic support in selected secondary schools in Ondo State which revealed that there was no significant difference between teachers' and students' perceptions on the use of Artificial Intelligence (AI) tools for academic support, while male and female students had significant differences in their perceptions. The results also showed that male teachers' mean perception score was not significantly different from female teachers' mean perception score for academic support using AI tools. The mean perception scores of males and females, however, differed significantly. Likewise, gender played no significant role in the use of Artificial Intelligence for learning according to Enebechi et al. (2025).

Students generally exhibit positive attitudes toward AI-based learning systems. However, perceptions vary based on institutional context and academic level. A study involving 552 students found significant differences in perception across academic levels using non-parametric statistical tests, indicating that experience influences acceptance of AI technologies (Tijani & Adeduyigbe, 2026). In a study by Nwana (2025) on perceived impact of artificial intelligence, digital tools, and pedagogical innovations in directed writing in secondary schools in Eastern Nigeria using 150 students revealed that AI tools enhance personalized learning, student engagement, and writing proficiency, though technological limitations, insufficient teacher training, and socio-economic factors hinder full implementation. The researchers, Sanusi et al. (2024), investigated the perception of the pre-service teachers in the field of AI. Their results indicate that pre-service teachers positively showed the behavioural intention to learn AI (excluding the construct of self-efficacy which cannot be used alone to trigger the learning behaviour of AI). According to Nwaoha (2025), the overall awareness of ODL students about AI in online assessment was moderate, with the awareness being higher for plagiarism detection tools and moderately positive for fairness and accuracy of AI in online assessments. In a study titled AI-Powered Assessment Tools: Teacher's Experiences and Challenges, Ditan and Sarmiento (2025) found that the teachers' overall experience with AI-powered assessment tools was positive, with many expressing confidences in their effectiveness and reliability for providing rapid, objective, and consistent feedback. There were, however, challenges that arose, such as limited training, technical constraints, ethical issues of privacy of data and inadequate institutional support.

The emergence of Artificial Intelligence (AI) has transformed various sectors of human endeavor, including education. AI-based assessment tools such as automated grading systems, intelligent tutoring systems, adaptive testing platforms, plagiarism detection software, and learning analytics applications have gained increasing attention due to their potential to improve instructional effectiveness and enhance students' learning outcomes. These tools offer opportunities for personalized feedback, efficient assessment processes, data-driven instructional decisions, and improved learner engagement.

Globally, educational institutions are increasingly integrating AI technologies into teaching and assessment practices. However, the successful implementation of these technologies depends largely on teachers, who serve as the primary users and facilitators of classroom instruction. Teachers' perceptions regarding the usefulness, ease of use, reliability, fairness, and effectiveness of AI-based assessment tools significantly influence their acceptance and utilization in educational settings.

In Nigerian, the adoption of AI technologies in secondary education remains at a relatively early stage. While some schools have begun experimenting with digital learning and assessment platforms, many public senior secondary schools still rely heavily on traditional assessment methods. Challenges such as inadequate technological infrastructure, limited access to digital resources, insufficient teacher training, poor internet connectivity, and concerns about the credibility and accuracy of AI-generated assessments affect teachers' perceptions and willingness to utilize AI-based assessment tools.

Furthermore, despite the growing global interest in AI in education, there is limited empirical evidence regarding how Nigerian public senior secondary school teachers perceive AI-based assessment tools and how these perceptions influence teaching and learning processes. It is unclear whether teachers view AI-based assessments as beneficial or threatening to their professional roles. Similarly, little is known about the extent to which positive or negative perceptions influence instructional practices, assessment effectiveness, student engagement, and learning outcomes. These absence of adequate information on teachers' perceptions of AI-based assessment tools creates a knowledge gap that may hinder policymakers, educational administrators, and curriculum planners from making informed decisions regarding the integration of AI technologies into secondary school education. Therefore, this study seeks to investigate teachers' perceptions of AI-based assessment tools and examine how these perceptions influence teaching and learning in public senior secondary schools in Hong Local Government Area of Adamawa State.

Research Question

1. What are the perceptions of teachers toward AI-based assessment tools in public senior secondary schools in Hong Local Government Adamawa State?
2. To what extent are AI-based assessment tools utilized by teachers in public senior secondary schools in Hong Local Government Adamawa State?
3. What are the factors that influence teachers' perceptions of AI-based assessment tools in public senior secondary schools in Hong Local Government Adamawa State?

Research Hypotheses

1. There is no significant relationship between teachers' perceptions of AI-based assessment tools and teaching effectiveness in public senior secondary schools in Hong Local Government Area Adamawa State.
2. There is no significant relationship between teachers' perceptions of AI-based assessment tools and students' learning outcomes in public senior secondary schools in Hong Local Government Area Adamawa State.
3. There is no significant difference between male and female on the factors influencing teachers' perceptions of AI-based assessment tools in public senior secondary schools in Hong Local Government Area Adamawa State.

Methodology

The type of design which has been used in this study is descriptive survey research design. The population consisted of all the teachers in the public senior secondary schools in the Hong Local Government Area, Adamawa State. The number of teachers sampled was 300 obtained by Slovin's sampling formula. Simple random and stratified sampling were also used when selecting the respondents. The data was gathered by an adapted, structured questionnaire, named “AI Perception and AI Assessment Utilization Scale (AIPAUS)”. The instrument has three sections: Section A which gathered the respondents' demographic data, Section B which comprised statements about teachers' perceptions of AI-based assessment tools, and Section C which gathered the respondents' opinions on the AI-based assessment tools developed. Section C included statements about factors that affect teachers' perceptions of AI-based assessment tools. The instrument was validated by experts in the field of Measurement and Evaluation. A small number of teachers, outside the study area, received a few copies of the questionnaire for pilot testing. Data collected from the pilot test was analyzed

using Cronbach's alpha and an acceptable internal consistency was obtained with the study reliability coefficient of 0.82. Frequency counts, mean, standard deviation, Pearson Product-Moment Correlation and t-test were used for the analysis of data gathered for the main study. The level of significance for all inferences statistical tests performed was set at 0.05.

Results

The results of these study are presented in tables 1, 2, 3, 4, 5 and 6.

Research Question 1. What are the perceptions of teachers toward AI-based assessment tools in public senior secondary schools in Hong Local Government Area Adamawa State?

Table 1. summary of frequency count on teachers' perceptions of AI-Based assessment tools in public senior secondary schools in Hong Local Government Area Adamawa State

Perception Level	Frequency	Percentage (%)
Positive	182	60.7
Neutral	58	19.3
Negative	60	20.0
Total	300	100

Result from Table 1 indicate that 182 (60.7%) teachers demonstrated positive perceptions of AI-based assessment tools, while 58 (19.3%) exhibited neutral perceptions and 60 (20.0%) showed negative perceptions. This suggests that the majority of teachers view AI-based assessment tools favorably and recognize their potential benefits in teaching and learning.

Research Question 2. To what extent are AI-based assessment tools utilized by teachers in Public senior secondary schools in Hong Local Government Adamawa State?

Table 2. summary of frequency on the level of utilization of AI-Based assessment tools by teachers in Public senior secondary schools in Hong Local Government Area Adamawa State

Level of Utilization	Frequency	Percentage (%)
High	105	35.0
Moderate	135	45.0
Low	60	20.0
Total	300	100

From Table 2 the results reveal that utilization of AI-based assessment tools among teachers is moderate (45.0%). This indicates that although teachers generally have positive perceptions, actual usage remains moderate due to infrastructural and technical constraints.

Research Question 3. What are the factors that influence teachers' perceptions of AI-based assessment tools in Public senior secondary schools in Hong Local Government Area Adamawa State?

Table 3. summary of mean and standard deviation on factors influencing teachers' perception of AI-Based assessment tools in Public senior secondary schools in Hong Local Government Area Adamawa State

Factors	Mean	Std.Deviation	Rank
Availability of ICT facilities	3.82	1.27	1st
Training on AI tools	3.75	1.65	2nd
Internet accessibility	3.69	0.67	3rd
Administrative support	3.61	1.42	4th
Technical competence	3.55	1.51	5th

Result from Table 3 shows that all the factor influence teachers' perceptions on AI-based assessment tools in public senior secondary schools in Hong Local Government Adamawa State. Availability of ICT facilities emerged as the most influential factor affecting teachers' perceptions of AI-based assessment tools, followed by training opportunities and internet accessibility.

Hypotheses Testing

H01: There is no significant relationship between teachers' perceptions of AI-based assessment tools and teaching effectiveness in Public senior secondary schools Hong Local Government Area Adamawa State.

Table 4. Summary of correlation analysis between teachers' perceptions of AI-Based assessment tools and teaching effectiveness in Public senior secondary schools in Hong Local Government Area Adamawa State

Variables	Mean	Std. Deviation	Correlation (R)	Sig. (2-Tailed)
Teachers Perception	3.24	1.78		
			0.642	0.000
Teaching Effectiveness	3.07	1.54		

Result from Table 4 shows that the p-value of 0.000 is less than 0.05 level of significance ($p < 0.05$). Therefore, the null hypothesis is rejected. We conclude that there is a significant positive relationship between teachers' perceptions of AI-based assessment tools and teaching effectiveness in Hong Local Government Area.

H02: There is no significant relationship between teachers' perceptions of AI-based assessment tools and students' learning outcomes in Public senior secondary schools in Hong Local Government Area Adamawa State.

Table 5. Summary of correlation analysis between teachers' perception of AI-Based assessment tools and students' learning outcomes in Public senior secondary schools in Hong Local Government Area Adamawa State

Variables	Mean	Std. Deviation	Correlation (R)	Sig. (2-Tailed)
Teachers Perception	3.37	1.53		
			0.589	0.000
Learning Outcomes	2.98	1.88		

Result from Table 5 shows that the p-value of 0.000 is less than 0.05 level of significance ($p < 0.05$). Therefore, the null hypothesis is rejected. We conclude that Teachers' perception significantly relate to improved student learning outcomes.

H03: There is no significant difference between male and female on the factors influencing teachers' perceptions of AI-based assessment tools in Public senior secondary schools in Hong Local Government Area Adamawa State.

Table 6. t-test summary of factors influencing teachers' perceptions of AI-Based assessment tools based on gender in Public senior secondary schools in Hong Local Government Area Adamawa State

Gender	N	Mean	Std. Deviation	t-value	p-value
Male	134	3.72	0.64		
				1.25	0.213
Female	166	3.65	0.59		

Result from Table 6 indicates that the p-value is greater than the level of significance ($p > 0.05$). therefore, the null hypothesis is accepted and conclude that male and female teachers in Hong Local Government Area of Adamawa State do not differ significantly in their perceptions of AI-based assessment tools.

Discussion

This study was carried out to investigate teachers' perception of AI-based assessment tools and their influence on teaching and learning in public senior secondary schools in Hong Local Government area, Adamawa State. The study revealed that teachers generally possess positive perceptions of AI-based assessment tools. This finding suggests that teachers recognize the capacity of AI technologies to simplify assessment processes, improve feedback delivery, and enhance instructional effectiveness. The study further revealed moderate utilization of AI-based assessment tools. Although teachers appreciate the benefits

of AI technologies, actual utilization remains constrained by inadequate infrastructure, insufficient training, poor internet access, and limited institutional support. This finding corroborates previous studies that identified infrastructural limitations as major barriers to educational technology adoption in developing countries.

The findings from research hypothesis one showed a significant positive relationship between teachers' perceptions and teaching effectiveness. Teachers who viewed AI-based assessment tools positively were more likely to use innovative instructional practices, provide timely feedback, and monitor student progress effectively. The finding of this study is in line with the study of Sanusi et al (2024), Onaghise (2025), Ditan and Sarmiento (2025), Tijani and Adeduyige (2026). This supports the argument that positive attitudes toward educational technology enhance instructional quality.

Findings from research hypothesis two showed a significant relationship between teachers' perceptions and students' learning outcomes. In this regard, AI-based assessment tools appear to facilitate personalized learning, immediate feedback, and better learner engagement, thereby contributing to improved academic achievement. The finding of this study is in line with the study of Ubabudu (2025), Oduma et al (2025) and Ngonso et al (2025) that AI-based assessment positively influences academic performance.

Furthermore, findings from research hypothesis three shows no significant gender difference in teachers' perceptions of AI- based assessment tools. The finding of this study concurs with the findings of Akinbuwa (2025) and Enebechi et al. (2025). This suggests that acceptance of AI technologies is increasingly becoming independent of gender among contemporary educators. But the finding disagrees with the findings of Ouahouda et al (2025). The findings of their study revealed a significant difference in AI-related perceptions based on gender and age among pre-service teachers.

Conclusion

The study aimed at determining the perception of teachers' on the use of AI based assessment tools and how it affects teaching and learning in public senior secondary schools in Hong Local Government area, Adamawa state. The overall results indicated that teachers in the public senior secondary schools in Nigeria have favorable attitudes towards the use of AI tools for assessment. Such favorable views play an important role in boosting the effectiveness of teaching and enhancing the achievement of students' learning. Nevertheless, the level of utilization is still at moderate utilization despite the presence of some challenges like inadequate ICT infrastructure, fewer training opportunities, insufficient internet connectivity, and absence of institutional support. The study findings, therefore, indicate that the effective implementation of AI assessment tools in secondary schools in Nigeria will not be realized if there is not sufficient awareness and knowledge of teachers, adequate infrastructure, and supportive educational policies.

Recommendations

Based on the findings, the following recommendations were made:

1. The Federal and State Ministries of Education should provide adequate ICT infrastructure in public senior secondary schools to facilitate the adoption of AI- based assessment tools.
2. School administrators should organize regular workshops, seminars, and professional development programmes to improve teachers' competence in the use of AI-based assessment technologies.
3. Government should improve internet accessibility and digital connectivity in public schools, particularly in rural areas.

References

1. Abubakar, U., Onasanya, S. A., & Ibrahim, H. A. (2024). Student perspectives and impact of AI integration in pedagogical practices in Nigerian tertiary institutions. *Advances in Mobile Learning Educational Research,* 4(2), 1135–1148.

2. Agbarakwe, H. A., & Chibueze, O. O. (2024). Leveraging artificial intelligence for enhanced assessment and feedback mechanisms in Nigeria higher education system. *International Journal of Research and Innovation in Social Science.*

3. Akinbuwa, O. A. (2025). Teacher's and Students' Perceptions of Artificial Intelligence (AI) Tools for Academic Support in Selected Secondary Schools in Ondo State. *Fuoye Journal of Education,* 8(1), 138-148.

4. Birma, A. I., Abbas Gora, A., & Zarma, M. L. (2025). Artificial intelligence in education in Nigeria. *International Journal of Academic Research in Progressive Education and Development.*

5. Ditan, K. J. & Sarmiento, J. R. (2025). Artificial intelligence-powered assessment tools: Teacher's experiences and challenges. *Global Scientific Journal,* 13(5), 1434-1444.

6. Enebechi, R.I., Nwosu, K.C, Amobi, U.V., & Luke, C.O. (2025). Undergraduate students' use of Artificial Intelligence Tools in their learning: Do gender and primary place of residence matter. *The Journal of Educational Research* 6(2),1-10.

7. Ibrahim, A., Taura, A. A., Iliyasu, A., Shogbesan, Y. O. & Lukman, S. A. (2024). Artificial Intelligence (AI): Perception and Utilization of AI Technologies in Educational Assessment in Nigerian Universities. *Edukasiana: Jurnal Inovasi Pendidikan*, 3(3), 367-380.

8. Ngonso, B. F., et al. (2025). Influence of artificial intelligence on educational performance of Nigerian students. *Journal of Infrastructure, Policy and Development*.

9. Nwaoha, J. U. (2025). Exploring Open Distance Learning (ODL) Students' Perceptions on AI Adoption for Online Assessments. *International Journal of Advanced Multidisciplinary Research and Educational Development*, 1(41), 781-785.

10. Nwana, E. N. (2025). Perceived impact of artificial intelligence, digital tools, and pedagogical innovations in directed writing in secondary schools in Eastern Nigeria. *Kontagora International Journal of Educational Research (KIJER),* 2 (2), 72–84.

11. Oduma, O. J., et al. (2025). Effect of artificial intelligence on secondary school students' academic performance in Delta State. *FUO Journal of Educational Research*.

12. Ouahouda F, Achtaich K, Achtaich N. (2025). Gender, age, and emotion-aware strategies in AI-enhanced education: insights from future educators and algorithmic thinking in primary schools. *EthAIca*, 4(406),1-9. https://doi.org/10.56294/ai2025406.

13. Ubabudu, M. C. (2025). AI and academic engagement in Abuja secondary schools. *Interdisciplinary Journal of Educational Practice.*

14. Onaghise, O. E. (2025). *Perception of education students on the usage of artificial intelligence (AI) tools at the University of Benin.* A research work submitted to the Department of Curriculum and Instructional Technology, Faculty of Education, University of Benin, Benin City, Nigeria in fulfillment of the requirement of the award of the bachelor of science (Ed) degree in Chemistry Education.

15. Tijani, B. E., & Adeduyigbe, A. M. (2026). *Students' perception of artificial intelligence in Nigerian universities.* Discover Education.