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APPLICATION OF ARTIFICIAL INTELLIGENCE IN ASSESSMENT OF ACADEMIC ACHIEVEMENT OF UNDERGRADUATE STUDENTS IN SOUTH EAST ZONE OF NIGERIA

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Abstract
Artificial Intelligence (AI) is increasingly transforming assessment practices in higher education and other learning contexts. This study examined the application of artificial intelligence in assessing academic achievement of undergraduate students. Descriptive survey research design was adopted for the study and six research questions were answered. The population of the study comprised 6,972 Faculty of Education third year (Year 3) undergraduate students of federal universities who were registered for the 2024/2025 academic session in the South-East, Nigeria. However, a sample of 378 undergraduate students for this research was determined by using the Taro Yamane formula for sample estimation. The instrument for data collection was a questionnaire titled Application of Artificial Intelligence in Assessment of Academic Achievement of Undergraduate Students (AAIAAAUS). The instrument was validated by experts in Educational Measurement and Evaluation, Faculty of Education; and Computer Science from NnamdiAzikiwe University Awka. Reliability indices of the sub-sections of the instrument was determined using Crombach Alpha method and the indices are 0.87, 0.91, 0.68, 0.77, and 0.74 respectively. Mean and standard deviation were used to answer the research questions. Findings among others revealed that AI is relevant and beneficial in test construction, grading, feedback provision, plagiarism detection, and continuous assessment, though concerns remain about its fairness and accuracy. Based on the findings, it was recommended among others that universities should organize extensive training sessions and workshops for both students and lecturers to build their capacity and improve their effective use of AI tools in teaching and assessment.

Keywords: Artificial intelligence, Assessment, Assessment techniques, Academic achievement, Undergraduates.

Introduction

Assessment is carried out to see what students know, understand and are able to do. Assessment is very important for tracking progress, planning next steps, reporting and involving students in learning. Assessment portrays the ways teachers support and assess students' learning, monitor progress and identify next steps in learning. It is described as a process by which feedback gotten is used by teachers to adjust their teaching strategies, and by students to adjust their learning strategies. In education, the term assessment refers to the wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students.Assessment is a systematic determination of a subject's merit, worth and significance using criterion governed by a set of standards. Sequel to this, assessment techniques are the criteria for assessing the success of a programme or project which are intended to help students achieve stated lesson objectives or learning outcomes (Esomonu and Ikeanumba, 2021). The authors further stressed that assessment technique explains the criteria to be used for assessment success (tests, survey, etc) as well as methods that will be used to collect and analyze the assessment information.

Assessment is central to educational progress. Kpangban and Onwuegbu (2018) defined assessment as the use of a variety of procedures to collect information about learning and instruction.

Assessment refers to the systematic process of collecting, analyzing, and interpreting information about learners' knowledge, skills, attitudes, and competencies for the purpose of making educational decisions (Ugwoke, 2021). It is a central component of the teaching–learning process and serves as a bridge between instruction and learning outcomes. Through assessment, educators determine the extent to which instructional objectives have been achieved and identify areas requiring improvement (Esomonu and Okeaba, 2021). It also functions as a means of improving subsequent learning. In Nigerian universities, lecturers still rely heavily on tests such as multiple-choice questions, essays, and practical examinations and assessment practices remain teacher-centred. Assessment should however be comprehensive because depending solely on a single examination fails to give a holistic view of students' academic achievement. The success of assessment equally demands the use of variety of tools for which technology is inevitable.Today, Information and Communication Technology (ICT) has become an inseparable part of daily life (Prajana & Astuti, 2020; Setiawan, 2018; Supianti, 2018). Its influence spans individuals, communities, and government institutions, supporting the transition from the industrial age to the information age (Herliani & Wahyudin, 2019; Shodiq, 2021). ICT is generally defined as technology used to acquire, organize, store, and manage data or information to produce relevant, accurate, and timely outputs for individuals and groups (Gusti & Ambiyar, 2021; Pabubung, 2021). As human intelligence grows, ICT continues to evolve through new innovations aimed at solving emerging problems (Delianti, 2018; Kurniawan et al., 2021). This evolution has positioned ICT as an essential support tool for both formal and self-directed learning.

The rise in technological awareness, led to the introduction of artificial intelligence (AI) in some universities across the world, as a means to assess students' learning outcomes by considering their backgrounds and study activities (Ugwoke, Eloanyi, Eziokwu, & Eneze, 2025). The COVID-19 pandemic, equally triggered a shift from conventional face-to-face assessment to virtual methods. Around the world, universities are adopting innovative strategies to redesign assessment delivery and sustain teaching and learning beyond traditional classrooms. These approaches which include the use of artificial intelligence, have increased in relevance post-pandemic, as they continue to enhance instructional delivery. The introduction of AI into education has further expanded possibilities for both lecturers and students.

Artificial intelligence (AI) plays an important role in enhancing students' academic achievement (Pabubung, 2021). It involves programming computers to perform tasks that humans perceive as intelligent often more efficiently than human effort (Alghafiqi, 2022; Ghazmi, 2021; Sasmito et al., 2021). Its applications in education are vast, enabling personalized learning experiences where AI systems adapt to students' individual needs, highlight problem areas, and offer tailored teaching strategies. Because of these capabilities, AI is reshaping higher education globally, influencing instruction, administration, and assessment. Traditionally, undergraduate assessment depended on human grading, paper-based assignments, and exams. These methods are often criticized for subjectivity, inconsistency across markers, delays in feedback, and logistical difficulties particularly in large classes with limited resources (Adeyemi, Alanamu, & Obisesan, 2025). AI-driven assessment tools, such as automated essay scoring (AES), automated grading of objective items, plagiarism/AI-use detection, and intelligent tutoring systems, promise faster feedback, reduced workload, and more consistent scoring (Ramesh & Sanampudi, 2021; Vieriu & Petrea, 2025).

Scholars interpret AI differently. Pelletie et al. (2022) described it as computer software that imitates aspects of human intelligence, while Leslie et al. (2021) highlight its use of algorithmic models to perform cognitive and perceptual tasks previously exclusive to human reasoning and evaluation. Similarly, UNICEF (2021) defines AI as machine-driven systems capable of generating predictions, recommendations, or decisions that influence physical or digital environments, based on human-set objectives. AI systems acquire knowledge autonomously, adapt to circumstances, and interact with users directly or indirectly to shape their surroundings.

In Nigerian universities especially in the South East, undergraduate assessment is still dominated by written exams, assignments, and continuous evaluation. These methods are frequently criticized for grading subjectivity, delayed feedback, and difficulties in managing large enrolments (Okoye & Nwafor, 2023). Increasingly, AI is being applied to address these limitations by automating tasks, improving objectivity, and ensuring prompt feedback (Vieriu & Petrea, 2025). Tools like plagiarism detection software (example, Turnitin), automated essay scoring systems, and adaptive testing platforms are already widely used globally. Research shows that AI enhances grading

consistency, supports personalized learning, and strengthens academic integrity (Ramesh & Sanampudi, 2021). For example, adaptive learning platforms and intelligent tutoring systems have been linked to improved student achievement and engagement by providing individualized feedback and targeted instruction (Vieriu & Petrea, 2025). Automated grading is highly effective for objective tests (example, multiple-choice items), while modern AES systems can reliably assess surface-level features of writing such as grammar, style, and organization delivering fast and consistent scores (Ramesh & Sanampudi, 2021). Scholars like Chen, (2020); and Vilberg et al, (2023) argue that AI can complement human evaluators by handling routine scoring tasks, thereby freeing lecturers to concentrate on higher-order teaching activities.

Nonetheless, serious concerns remain regarding validity and fairness of AI tools. AES systems still struggle to evaluate deeper aspects of writing, such as argument quality, originality, and critical thinking skills central to many undergraduate assessments (Ramesh &Sanampudi, 2021). Furthermore, if trained on biased or unrepresentative data, AI systems can perpetuate or even amplify existing inequalities, disadvantaging groups such as non-native English speakers or underrepresented populations (Adeyemi et al., 2025). The increasing use of artificial intelligence tools, particularly large language models, in generating essays has further complicated assessment integrity by heightening the risk of academic misconduct (Goodier, 2025). Detection systems themselves are not foolproof, as they may yield false positives or fail to identify sophisticated AI-generated content, raising ethical and procedural challenges for institutions (Turnitin, 2025).The Nigerian university context adds further complexity. While AI offers potential for addressing large class sizes, delayed feedback, and administrative inefficiencies, Nigeria faces infrastructural constraints (limited internet access, inconsistent electricity, and uneven availability of devices), low levels of digital literacy in some institutions, and limited national policy guidance for AI in education (Adeyemi et al., 2025). These structural barriers mean that the benefits of AI may be unevenly distributed across institutions and student populations, possibly exacerbating existing educational inequalities if implementation is not carefully planned and regulated (Adeyemi et al., 2025).

Given this mix of promise and challenge, empirical research is needed to clarify how AI-based assessment tools influence undergraduate students' academic achievement, perceptions, and the integrity of assessment outcomes in the Nigerian context. Specifically, it is necessary to investigate (a) the extent to which AI improves timeliness, objectivity, and diagnostic feedback; (b) whether AES and automated grading validly capture higher-order learning outcomes; and (c) how infrastructural, ethical, and policy issues affect adoption and fairness. Addressing these questions will help universities adopt AI in ways that enhance learning and assessment quality while protecting academic integrity and equity.

Statement of the Problem

Assessment is a critical component of higher education, as it provides evidence of students' academic achievement and informs decisions on progression, certification, and quality assurance. In universities within the South East Zone of Nigeria, traditional assessment practices such as written examinations, assignments, and manual grading are predominant. However, these methods are often associated with several challenges including subjectivity in scoring, inconsistencies across markers, delays in feedback, and difficulties in managing large class sizes. Such challenges weaken the credibility of assessment outcomes and may hinder the academic growth of students.Artificial Intelligence (AI) offers promising alternatives to address these limitations. Through automated essay scoring, plagiarism detection, adaptive testing, and intelligent tutoring systems, AI has the potential to make assessment more objective, consistent, and timely. In addition, AI-powered platforms can provide diagnostic feedback that supports personalized learning and improves students' overall achievement. Despite these advantages, concerns persist about the capacity of AI systems to accurately assess higher-order thinking skills, creativity, and context-specific responses, which are critical aspects of undergraduate education in Nigeria.

In the South East zone, additional barriers such as poor internet infrastructure, limited digital literacy, and uneven institutional readiness raise questions about the feasibility and effectiveness of AI integration in assessment practices. Furthermore, the rise of generative AI tools has increased opportunities for academic dishonesty, while the reliability of AI-detection systems remains uncertain.Despite global evidence of AI's influence in education, there is a scarcity of empirical

studies that specifically examine how AI is being applied in the assessment of undergraduate students' academic achievement in Nigerian universities, particularly in the South East zone. This lack of evidence creates a gap in knowledge for psychometricians, policymakers, educators, and institutions on how best to harness AI in ways that enhance assessment validity, fairness, and learning outcomes. Addressing this gap is therefore critical to improving the quality and credibility of assessment in higher education.

Research Questions

The following research questions guided the study

1. How are Artificial Intelligence applied in academic assessment among undergraduate students?
2. How do undergraduate students perceive the credibility of applying Artificial Intelligence in academic assessment?
3. What influence does the use of AI-powered tools have on undergraduate students' academic achievement?
4. What benefits do undergraduate students derive from the use of AI in assessment?
5. What challenges do undergraduate students face regarding the use of AI in assessment?
6. How can AI be more effectively integrated into the assessment of undergraduate students' achievement in Nigerian universities?

Methods

Descriptive survey research design was adopted for the study. The population of the study comprised undergraduate students of federal universities in the South-East, Nigeria. 6, 972 third year (3rd Year) students of Faculties of Education who were registered for the 2024/2025 academic session. However, by using the Taro Yamane formula for obtaining sample, a sample of 378 was obtained for the study. The instrument for data collection was a questionnaire titled Application of Artificial Intelligence in Assessment of Academic Achievement of Undergraduate Students (AAIAAAUS) with sub-division of awareness of the use of Artificial Intelligence in academic assessment, perceived accuracy, fairness, and reliability of AI-based assessment compared to traditional methods, influence of AI-powered tools (example, plagiarism checkers, automated grading systems, AI tutors) on undergraduate students' academic achievement, benefits undergraduate students derive from the use of AI in assessment, andhow AI is more effectively integrated into the assessment of undergraduate students' achievement in Nigerian universities. The questionnaire was structured on a four-point rating scale of Strongly Agree (SA) =4, Agree (A) =3, Disagree (D) =2 and Strongly Disagree (SD) =1. The instruments were validated by experts in Educational Measurement and Evaluation, Faculty of Education; and Computer Science from NnamdiAzikiwe University Awka. Reliability indices of the sub-sections of the instrument were determined using Crombach Alpha method and the indices are 0.87 for awareness of the use of Artificial Intelligence in academic assessment, 0.91 for perceived accuracy, fairness, and reliability of AI-based assessment compared to traditional methods, 0.68 for influence of AI-powered tools (example, plagiarism checkers, automated grading systems, AI tutors) on undergraduate students' academic achievement, 0.77 for benefits undergraduate students derive from the use of AI in assessment, and0.74 for how AI is more effectively integrated into the assessment of undergraduate students' achievement in Nigerian universities. Although, three hundred and eighty-one (381) questionnaires were distributed, three hundred and seventy-eight (378) were returned and found valid for analysis. Mean and standard deviation were used to answer the research questions. The decision rule was that any item that scored a mean of 2.50 and above would be seen as having attracted positive responses of high extent/agree, while items that scored less than 2.50 would be regarded as having attracted negative responses of low extent/ disagree.

Results

Research Question 1: How are Artificial Intelligence applied in academic assessment among undergraduate students?

Table 1: *Mean Response on How Artificial Intelligence are Applied in Academic Assessment among Undergraduate Students*

S/N	ITEMS	MEAN	SD	DECISION
1	Artificial Intelligence can be used for test construction to enhance assessment of students' academic achievement.	3.46	1.08	Agreed
2	Artificial Intelligence is helpful in test administration processes.	2.64	1.13	Agreed
3	Artificial Intelligence can be applied in assessing multiple-choice or objective tests	3.22	1.08	Agreed
4	Artificial Intelligence is efficient in grading of students' academic achievement.	3.15	1.12	Agreed
5	Artificial Intelligence integrates students' background and activities into their overall academic achievement.	3.34	1.16	Agreed
6	Artificial intelligence has the potential improving fairness and accuracy in academic grading.	2.56	1.20	Agreed
7	Artificial intelligence can be used in continuous assessment such as assignments and projects.	2.74	1.21	Agreed
8	Artificial intelligence can be used to detect plagiarism or cheating in academic work.	2.95	1.34	Agreed
9	Artificial intelligence can provide personalized feedback after assessments.	3.36	1.22	Agreed
10	Artificial intelligence can be applied in assessing essay-type examinations	3.42	1.20	Agreed
	Total	**3.084**	**1.61**	**Agreed**

The results in Table 1 indicate that undergraduate students generally agree that Artificial Intelligence (AI) can be applied in various aspects of academic assessment. The overall mean score of 3.08 (SD = 1.61) falls above the decision benchmark, showing a positive awareness and perception of AI use in assessment. The highest-rated item was that AI can be used for test construction to enhance assessment (Mean = 3.46, SD = 1.08). Other highly rated items include AI in assessing essay-type examinations (Mean = 3.42, SD = 1.20) and AI providing personalized feedback after assessments (Mean = 3.36, SD = 1.22). Students also agreed that AI can integrate students' background and activities into overall achievement (Mean = 3.34, SD = 1.16). The lowest-rated awareness was on AI improving fairness and accuracy in grading (Mean = 2.56, SD = 1.20). Finally, the students agree that AI is relevant and beneficial in test construction, grading, feedback provision, plagiarism detection, and continuous assessment, though concerns remain about its fairness and accuracy.

Research Question 2: How do undergraduate students perceive the credibility of applying Artificial Intelligence in academic assessment?

Table 2: *Mean Responses on how Undergraduate Students Perceive the Credibility of AI-based Assessment Compared to Traditional Methods*

S/N	ITEMS	MEAN	SD	DECISION
1	Artificial Intelligencebased assessment provides more accurate grading than traditional human grading	3.01	0.87	Agreed
2	Errors in grading are less likely to occur with AI-based assessment than with traditional methods.	3.21	0.92	Agreed
3	AI-based assessment ensures consistency in grading across different students compared to traditional assessment.	3.22	0.88	Agreed
4	Traditional assessment methods are more accurate than AI-based assessment.	2.15	1.41	Disagreed
5	AI-based assessment reduces human bias in grading compared to traditional methods.	3.41	1.06	Agreed
6	AI-based assessment treats all students equally regardless of their background.	2.60	1.24	Agreed
7	Traditional assessment methods are fairer than AI-based assessment	1.81	1.18	Disagreed
8	AI-based assessment promotes fairness by relying on data and algorithms rather than personal judgment	2.66	1.21	Agreed
9	AI-based assessment is more reliable over time than traditional assessment.	3.13	1.22	Agreed
10	The outcomes of AI-based assessments can be trusted more than those of traditional assessments.	3.29	1.41	Agreed
11	Traditional assessment methods are more dependable than AI-based assessment.	3.52	1.33	Agreed
12	AI-based assessment ensures stability and consistency of results across	3.31	1.06	Agreed

	different tests and students.			
	Total	**2.94**	**1.15**	**Agreed**

Findings from Table 2 indicates that undergraduate students generally agree that AI-based assessment has potential advantages in terms of accuracy, fairness, and reliability compared to traditional methods withan overall mean score of 2.94 (SD = 1.15). in the aspect of accuracy, students agreed that AI-based assessment provides more accurate grading (M = 3.01), reduces errors (M = 3.21), and ensures grading consistency (M = 3.22). However, they disagreed with the notion that traditional methods are more accurate (M = 2.15). As for fairness, the undergraduate students perceived AI-based assessment as capable of reducing bias (M = 3.41) and promoting fairness through data-driven approaches (M = 2.66). However, their agreement was moderate regarding equal treatment of all students (M = 2.60). They disagreed that traditional methods are fairer than AI (M = 1.81). On the part of reliability, the students agreed that AI-based assessment is reliable over time (M = 3.13), trustworthy (M = 3.29), and ensures consistency of results (M = 3.31). Interestingly, they also agreed that traditional assessment methods are more dependable (M = 3.52), suggesting mixed perceptions about reliability.

Research Question 3: What influence does the use of AI-powered tools have on undergraduate students' academic achievement?

Table 3: *Mean Response on Influence of the use of AI-powered tools on undergraduate students' academic achievement?*

S/N	ITEMS	MEAN	SD	DECISION
1	AI-powered plagiarism checkers have improved the originality of my assignments and projects.	3.44	1.44	Agreed
2	The use of plagiarism checkers has made me more careful in citing and referencing sources.	2.88	1.02	Agreed
3	Plagiarism detection tools have enhanced the quality of my academic writing.	2.75	1.31	Agreed
4	Automated grading systems provide timely feedback that helps me improve my achievement.	2.92	1.12	Agreed
5	AI-based grading is more consistent and objective compared to human grading.	2.99	1.31	Agreed
6	Feedback from automated grading has helped me identify my strengths and weaknesses.	2.77	1.18	Agreed
7	AI-powered tutors or learning apps have helped me understand difficult academic concepts better.	3.17	1.25	Agreed
8	AI tutors provide personalized learning experiences that improve my academic achievement.	3.41	1.20	Agreed
9	The use of AI tutors has increased my motivation and engagement in learning.	3.10	1.15	Agreed
10	The use of AI-powered tools has improved my overall academic achievement.	2.63	1.21	Agreed
11	AI-powered tools save me time and make studying more efficient.	2.67	1.12	
12	I would recommend the integration of AI-powered tools to enhance students' academic achievement.	2.81	1.22	
	Total	**2.96**	**1.21**	**Agreed**

The results in Table 3 show that undergraduate students generally agree that AI-powered tools have a positive impact on their academic achievement, with an overall mean score of 2.96 (SD = 1.21). Concerning plagiarism detection, students agreed that AI plagiarism checkers enhance the originality of their assignments (M = 3.44), promote proper citation practices (M = 2.88), and improve the quality of their academic writing (M = 2.75). In relation to automated grading systems, respondents agreed that such tools provide timely feedback (M = 2.92), ensure fairness and consistency (M = 2.99), and assist in identifying strengths and weaknesses (M = 2.77). Regarding AI tutors and learning support, students strongly agreed that AI tutors help them grasp difficult concepts (M = 3.17), offer personalized learning experiences (M = 3.41), and boost motivation to learn (M = 3.10). More moderately, students agreed that AI-powered tools contribute to overall academic achievement (M = 2.63), improve efficiency and save time (M = 2.67), and should be more fully integrated into learning processes (M = 2.81).

Research Question 4: What benefits do undergraduate students derive from the use of AI in assessment?

Table 4: *Mean Response on Benefits Undergraduate Students Derive from the Use of AI in Assessment*

S/N	ITEMS	MEAN	SD	DECISION
1	AI-based assessment reduces ensures fairer grading compared to human assessment.	3.11	1.27	Agreed
2	AI assessment provides objective assessment of students'achievement.	3.25	1.31	Agreed
3	The use of AI in assessment increases trust in the accuracy of grades received.	2.76	1.11	Agreed
4	AI assessment provides quicker feedback than traditional assessment methods.	2.54	1.19	Agreed
5	The use of AI in assessment saves time for both students and lecturers.	3.18	1.22	Agreed
6	AI assessment makes the assessment process more efficient.	3.28	1.21	Agreed
7	AI-powered assessment provides personalized feedback that helps me understand my strengths and weaknesses.	2.96	1.23	Agreed
8	Feedback from AI assessments helps me improve in subsequent academic tasks.	2.77	1.22	Agreed
9	AI assessment encourages continuous learning and self-improvement.	3.07	1.36	Agreed
10	AI assessment tools help me to develop better writing and problem-solving skills.	3.01	1.34	Agreed
11	The use of AI in assessment motivates me to prepare better for academic tasks.	3.28	1.38	
12	AI-based assessment contributes to improving my overall academic achievement.	2.86	1.38	
	Total	**3.01**	**1.26**	**Agreed**

The findings in Table 4 indicate that undergraduate students generally agree they benefit from AI use in assessment, with an overall mean score of 3.01 (SD = 1.26). Regarding accuracy and fairness, students agreed that AI reduces bias (M = 3.11) and ensures consistent, objective evaluation (M = 3.25), though their agreement was moderate on whether it improves trust in grading accuracy (M = 2.76). In terms of timeliness and efficiency, they acknowledged that AI saves time (M = 3.18) and enhances efficiency in evaluation (M = 3.28), but timely feedback received lower support (M = 2.54). On learning and feedback, students agreed that AI-generated feedback helps them identify strengths and weaknesses (M = 2.96), assists in improving tasks (M = 2.77), and promotes continuous learning (M = 3.07). For skill development and motivation, students believed AI supports better writing and problem-solving skills (M = 3.01), motivates improved preparation (M = 3.28), and contributes to overall academic achievement (M = 2.86). Overall, the results suggest that students view AI-based assessment as beneficial, especially in promoting fairness, objectivity, efficiency, and motivation. However, perceptions of its effectiveness in timely feedback and in building trust in grading accuracy were less strong.

Research Question 5: What challenges do undergraduate students face regarding the use of AI in assessment?

Table 5:*Mean Response on What Challenges Undergraduate Students Face Regarding the Use of AI in assessment*

S/N	ITEMS	MEAN	SD	DECISION
1	I find artificial intelligence tool difficult to understand and use.	2.98	1.38	Agreed
2	There is not enough support or training on how to use artificial intelligence tool.	3.29	1.20	Agreed
3	Artificial Intelligence tools are often not reliable and Malfunction	3.36	1.12	Agreed
4	Using Artificial intelligence tools is too expensive for me.	3.26	1.14	Agreed
5	Artificial intelligence tools sometimes give incorrect or misleading information.	3.21	1.16	Agreed
6	There is a lack of Artificial intelligence tools that are Relevant to my course of study.	2.76	1.28	Agreed
7	I worry about my data privacy when using Artificial Intelligence.	3.07	1.26	Agreed
	Total	**3.13**	**1.22**	**Agreed**

The results in Table 5 show that students generally agree they encounter significant challenges when using AI tools in assessment, with an overall mean score of 3.13 (SD = 1.22).

Concerning ease of use and support, undergraduates reported some difficulty in understanding and applying AI tools (M = 2.98) and highlighted insufficient training or support (M = 3.29). They also noted reliability concerns, indicating that AI tools can malfunction or be unreliable (M = 3.36) and may sometimes generate inaccurate or misleading information (M = 3.21). In terms of cost and relevance, students observed that AI tools are relatively expensive (M = 3.26) and often lack direct applicability to their field of study (M = 2.76). Data privacy also emerged as a concern, with students expressing unease over the security of personal data when using AI systems (M = 3.07). Overall, undergraduates perceive high cost, reliability issues, inadequate training, and data privacy risks as the key obstacles to adopting AI tools for assessment. Although they acknowledge the potential benefits, these barriers could limit their effective use in academic settings.

Research Question 6: How can AI be more effectively integrated into the assessment of undergraduate students' achievement in Nigerian universities?

Table 6: *Mean Response on how AI can be more Effectively Integrated into the Assessment of undergraduate students' Achievement in Nigerian universities*

S/N	ITEMS	MEAN	SD	DECISION
1	More training and workshops on artificial Intelligence tools should be provided	3.08	1.55	Agreed
2	Artificial Intelligence tools should be made more Affordable for students.	3.15	0.57	Agreed
3	Technical support for artificial intelligence tools Should be readily available.	3.21	0.41	Agreed
4	University should invest in reliable and up-to-date Artificial intelligence tools.	3.01	1.52	Agreed
5	Student should be educated about data privacy and Security when using artificial intelligence tools.	3.17	1.36	Agreed
6	Artificial Intelligence tools should be integrated into the curriculum in a meaningful way.	3.43	1.68	Agreed
7	Feedback from students should be used to improved artificial intelligence tools.	3.38	0.68	Agreed
	Total	**3.20**	**1.11**	**Agreed**

Findings from Table 6 reveal that undergraduate students largely agree on various strategies for enhancing the use of AI tools in academic assessment, with an overall mean score of 3.20 (SD = 1.11). They emphasized the need for additional training and workshops on AI tools (M = 3.08) as well as education on data privacy and security as part of capacity building (M = 3.17). In terms of affordability and support, students agreed that AI tools should be made more accessible financially (M = 3.15) and backed by readily available technical support (M = 3.21). Regarding institutional commitment, they pointed out that universities should invest in modern and dependable AI tools (M = 3.01). The strongest consensus was on the meaningful integration of AI tools into the curriculum (M = 3.43). Finally, students stressed the importance of incorporating their feedback to continuously improve AI tools (M = 3.38).

Discussion of the Findings

The findings of this study indicate that undergraduate students generally hold a positive perception of the application of Artificial Intelligence (AI) in academic assessment. The overall mean score of 3.08 (SD = 1.61) surpasses the decision benchmark, signifying that students recognize the relevance of AI in enhancing assessment practices. This is consistent with recent literature, which argues that AI offers significant opportunities to improve assessment validity, efficiency, and student engagement (Okonkwo & Adeyemi, 2023; Ugwoke et al., 2025). This supports the findings of Bassey and Essien (2022), who note that AI can analyze diverse data such as class participation, learning styles, and online activities thereby generating a more comprehensive picture of student achievement than traditional methods. In addition, the finding aligns with Onuka (2021), who emphasized that AI can support educators in creating diverse and standardized test items that minimize human bias and error. This confirms that students perceive AI as relevant and beneficial in multiple aspects of academic assessment particularly in test construction, grading support, feedback provision, plagiarism detection, and continuous assessment. However, their skepticism regarding fairness and accuracy

highlights the need for transparent AI systems and policies that ensure reliability, equity, and ethical compliance in educational settings.

The results in Table 2 show that undergraduate students generally perceive AI-based assessment as advantageous in terms of accuracy, fairness, and reliability when compared to traditional methods. The overall mean score of 2.94 (SD = 1.15), which is close to the decision benchmark, suggests that students are positively inclined towards AI, though some reservations remain.These findings align with prior research indicating that AI technologies minimize human error by applying standardized algorithms to grading (Onuka, 2021). Importantly, students disagreed that traditional methods are more accurate (M = 2.15), reinforcing the belief that automation enhances objectivity in grading compared to subjective human judgment. Also, These findings align with the assertion by Bassey and Essien (2022) that AI enhances test reliability through standardized grading procedures and consistent application of criteria. In addition, This finding echoes the arguments of Alemu (2018), who observed that learners often balance openness to technological innovation with attachment to traditional methods that provide a sense of legitimacy.

The results in Table 3 reveal that undergraduate students generally agree that AI-powered tools positively influence their academic achievement, with an overall mean score of 2.96 (SD = 1.21). This suggests that while students recognize the benefits of AI in learning and assessment, their acceptance is moderate and shaped by the specific functions of the tools. This result is consistent with the findings of Bassey & Essien, 2022), which emphasize that AI plagiarism detection software (such as Turnitin) promotes academic integrity and discourages unethical practices. The relatively high agreement highlights students' awareness that AI tools foster accountability and adherence to scholarly standards. These findings reinforce the argument of Alemu (2018), who noted that adaptive AI systems tailor learning to individual needs, thereby fostering deeper engagement and comprehension. The strong support for AI tutors suggests that students appreciate the flexibility and personalization these tools bring, especially in supplementing classroom instruction. students' responses highlight that AI-powered tools contribute positively to academic achievement, particularly through plagiarism detection, personalized learning, and timely feedback. However, their moderate agreement on overall achievement and efficiency suggests that AI is seen more as a complementary aid rather than a complete solution to academic challenges.

The results in Table 4 demonstrate that undergraduate students generally perceive AI-based assessment as beneficial, with an overall mean score of 3.01 (SD = 1.26). This finding indicates a positive orientation toward the integration of AI in academic evaluation, especially in terms of fairness, objectivity, efficiency, and motivation. However, some reservations were expressed regarding timeliness of feedback and trust in grading accuracy. This is in line with Okonkwo and Adeyemi (2023), who argue that AI reduces subjectivity by applying uniform scoring algorithms. However, students only moderately agreed that AI assessments increase trust in grading accuracy, suggesting lingering concerns about algorithmic transparency and fairness. This mixed perception echoes Williamson and Piattoeva's (2021) observation that while AI promises objectivity, uncertainties about data quality and hidden biases may affect users' confidence.

The results presented in Table 5 show that undergraduate students generally face notable challenges with the use of AI tools in assessment, with an overall mean score of 3.13 (SD = 1.22). This indicates that while students recognize the benefits of AI in academic assessment (as seen in previous tables), significant obstacles still limit its full adoption and effectiveness. The challenges identified span issues of ease of use, reliability, cost, relevance, and data privacy. This finding suggests that a lack of digital literacy and insufficient institutional support may act as barriers to effective integration of AI in learning and assessment. This finding is consistent with earlier studies (Odewumi & Adeniran, 2022; Zhang & Aslan, 2023) which reported that inadequate digital literacy and lack of orientation often hinder students' ability to maximize the potential of AI. Moreover, students expressed concerns over the inadequacy of training or support, highlighting the need for institutional interventions such as workshops, tutorials, and technical support structures to enhance usability.

The results presented in Table 5 show that undergraduate students generally agree that they face notable challenges in the use of artificial intelligence (AI) tools for assessment, with an overall mean score of 3.13 (SD = 1.22). This indicates that while AI technologies are increasingly recognized for their potential to improve assessment processes, several obstacles still limit their effective

utilization in academic contexts.This finding is consistent with earlier research (Odewumi & Adeniran, 2022; Zhang & Aslan, 2023), which emphasized that limited digital literacy and insufficient institutional capacity-building hinder the integration of emerging technologies in education. Without adequate training, students may not develop the skills required to harness AI tools effectively in their learning and assessment activities.This also aligns with Aljanabi (2023), who observed that the credibility of AI systems in education is often undermined by algorithmic bias, data errors, and technological glitches. Such reliability issues may reduce students' trust in AI-based assessments and limit their adoption for critical academic purposes.

The results in Table 6 reveal that undergraduate students generally agree on a number of strategies that could enhance the use of artificial intelligence (AI) tools in academic assessment, with an overall mean score of 3.20 (SD = 1.11). This suggests that, despite the challenges highlighted earlier, students recognize practical pathways through which AI adoption in assessment can be improved in higher education contexts.This aligns with findings by Odewumi and Adeniran (2022), who observed that digital literacy is a crucial factor in enabling students to effectively utilize emerging technologies. By incorporating structured training and sensitization programs, universities can bridge the knowledge gap and promote responsible AI use.Similar findings were reported by Bello and Yusuf (2022), who noted that high costs and lack of technical support often discourage sustained adoption of educational technologies in Nigerian universities. Addressing these issues could ensure wider accessibility and reduce the digital divide among students.

Conclusion

From the findings, it can be concluded that although artificial intelligence (AI) tools have the potential to enhance students' academic achievement, understanding, and motivation, their effective use is limited by challenges such as insufficient training, reliability issues, and the risk of misinformation. To address these barriers, higher institutions should strengthen support systems, make AI tools more affordable, provide adequate technical assistance, and integrate AI meaningfully into the curriculum. Implementing these measures would enable students to fully harness the benefits of AI in education.

Recommendations

Based on the findings and conclusion of the study, the following recommendations were made:

1. Universities should organize extensive training sessions and workshops for both students
2. and lecturers to build their capacity and improve their effective use of AI tools in teaching and assessment.
3. Developers of technology should partner with higher institutions to design affordable and user-friendly AI tools that address students' diverse academic needs, thereby promoting fair and inclusive access.
4. Universities should establish dedicated technical support units to provide timely assistance for students encountering challenges with AI tools, ensuring smoother learning experiences.
5. Educators should incorporate data privacy and security education into the curriculum so that students are well-informed about the risks of using AI tools and the measures necessary to safeguard their personal data.
6. Deliberate institutional strategies, including capacity-building, subsidizing access, and ethical safeguarding in AI deployment should be put in place to curb the problems encountered in AI usage.

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