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ALVAN IKOKU FEDERAL UNIVERSITY OF EDUCATION, OWERRI
https://www-ajsspub-org.b12sites,com https://www.ajsspub2.org
E- ISSN: 3043 – 5463 ISSN: 1595 – 5842 **VOLUME 3, ISSUE 2, 2026**

RESEARCH ARTICLE

PSYCHOMETRIC INTEGRITY OF THE ASSESSMENTS OF STUDENTS IN AN AI-DRIVEN SOCIETY: IMPLICATIONS FOR SUSTAINABLE CITIZENSHIP EDUCATION

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ABSTRACT

Increase in the use of artificial intelligence (AI) technologies is transforming the education systems, particularly in the area of educational assessment. Educational assessment plays a pivotal role in determining learners achieved instructional objectives and in guiding critical administrative decisions such as certification, promotion, and employment. The assessment outcomes can be credible and meaningful, when it maintains strong psychometric properties. However, the increasing accessibility of AI tools particularly ChatGPT has introduced new challenges to the integrity of educational measurement. While the technology has legitimate applications in supporting learning, their misuse during formal examinations raises serious concerns regarding the accuracy of assessment results. AI-generated answers can artificially increase students' scores, leading to results that may not accurately represent learners' actual knowledge and competencies. Consequently, the validity, reliability and fairness of assessments decline due to inconsistencies in performance, measuring of irrelevant construct caused by unethical use of AI tools. Beyond the measurement concerns, these challenges have broader implications for sustainable citizenship education, which seeks to cultivate ethical behaviour, critical thinking, and responsible societal participation. Therefore, when these values are compromised in this era of AI-driven society, assessments will lack the credence to produce graduates who have integrity, genuine competence in their field of study, and who have developed into responsible citizens. The researchers therefore suggested that higher institutions of learning should design and implement clear policies on responsible use of artificial intelligence. They should integrate ethics-based instruction that guides students on acceptable and unacceptable uses of AI technologies in academic work, particularly during examinations.

Keywords: Psychometric, educational assessment, AI-assisted cheating, Sustainable citizenship education

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Received: 7/5/2026; **Revised:** 29/6/2026; **Accepted:** 10/7/2026; **Published:** 19/7/2026

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1.0. INTRODUCTION

Educational assessment is pivotal in determining the effectiveness of teaching and learning. It plays an important role in ascertaining the extent to which learners have achieved the set instructional objectives. Where the importance of assessment cannot be over-emphasized, its results guide policy and educational decision-making, certification, placement, promotion, and employment opportunities (Nworgu, 2015). Further, it is pertinent to note that the policy and educational decisions made from assessment results will be meaningful and credible when the assessment maintains strong psychometric properties, i. e that assessment must be reliable, valid, and fair (Anyiam, 2025). These psychometric qualities ensure that test scores accurately represent the knowledge, abilities, and competencies of learners.

However, the proliferation of artificial intelligence technologies such as ChatGPT has begun to change the narratives of the education systems especially in the aspect of assessment. The technologies are the generative AI systems, automated writing assistants, and algorithm-driven problem-solving platforms are now accessible to students (Alier, Peñalvo, & Camba, 2024). Typical of the AI technology used presently in Nigeria by students and lecturers are the OpenAI ChatGPT, Google Gemini, Microsoft Copilot and automated essay generators. These technologies are capable of producing sophisticated responses within seconds. It becomes pertinent to note that while these AI tools have legitimate applications in supporting learning (Ouyang, & Zhang, 2024) their misuse during formal examinations introduces novel threats to the integrity of educational measurement.

Recently, the misuse of AI during examinations has raised concerns among educators, assessment specialists, and policymakers. Students in higher institutions of learning across Nigeria have been observed to have relied on AI systems like ChatGPT to generate answers during examinations. And if the scores obtained in the use of the AI technology like ChatGPT does not reflect the effectiveness of AI assistance or the student's ability to manipulate technological tools in any examination, then it becomes an examination malpractice.

The identified form of examination malpractice results to academic achievement scores that do not represent the students' actual competencies. This misuse of AI technology directly jeopardises the psychometric integrity of assessments (Ivory, Finnerty, Dunn, Philpot, & Warmelink, 2026). This refers to the degree to which an assessment maintains empirically sound measurement properties such as validity, reliability and fairness (Onyeka & Onuekwusi, 2019; Nworgu, 2015). And beyond the technical concerns of measurement outcomes, the issue also has broader social implications in any nation.

Education of any nation aims to achieve behavioural modification of her citizens preparing individuals for effective and responsible participation in the society. This citizenship education needs to be sustained. Therefore, sustainable citizenship education is the education that aims to cultivate acceptable moral behaviour, critical thinking, social responsibility, and competence necessary for societal development (Mardikaningsih, Masnawati, & Aisyah, 2021). When the assessment system becomes compromised by AI-assisted cheating usually with ChatGPT in examinations, the credibility of educational qualifications will be undermined. Then the turning out of graduates who lack the knowledge and skills required for responsible citizenship will then be on increase. Therefore, exposing how AI misuse influences the reliability, validity, and fairness of student assessments becomes pertinent for understanding its implications for sustainable citizenship education.

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2.0. LITERATURE REVIEW

2.1. Contexts and Applications of Artificial Intelligent Technologies

2.2. Reliability of Students' Assessment Results in an AI-Driven Society

Reliability is the consistency of an assessment to measure what it is designed to measure (Nworgu, 2015). In the context of this review, reliability refers to the extent to which an assessment yields consistent and stable results across different administrations or contexts. It is expected that a reliable test ensures that observed differences in scores are attributable primarily to actual differences in student ability rather than guessing or external influences (Reynolds, Altmann, & Allen, 2021). Where as in Nigeria, assessment in schools usually rely on the classical test model that bases students' performance on observed scores, which is the sum of true scores and error or guessing score (Oladele, 2021).

So, in an AI-driven educational environment, the reliability of student assessments can be seriously jeopardised when AI-tools like ChatGPT are used during examinations. When some students secretly use ChatGPT to generate responses while others rely solely on their knowledge, the consistency of the measurement process becomes compromised. Scores variation may not be due to genuine differences in cognitive ability but because of unequal access to AI tool assistance.

Studies have revealed the discrepancies in students' academic achievement due to the use of AI-tool (Ali, Chaudhry, & Samin, 2025). For instance, students who use AI-tools during a computer-based test (CBT) may achieve higher scores by receiving instant solutions to complex questions. However, when these students are assessed in strictly controlled environment where AI-tools are unavailable, the same student may perform significantly worse. Such discrepancies indicate that the assessment results are unstable and therefore unreliable indicators of the student's true competence.

AI-assisted cheating fosters measurement error in assessment (Safiulina, et al., 2025; Bulut, et al., 2024). This error occurs when factors unrelated to the intended construct influence test scores. In this review, the AI-assisted testing becomes an extraneous variable affecting student academic performance. Consequently, the reliability coefficient of the assessment decreases because the observed scores which is the students' achievement scores no longer consistently represent the underlying abilities being measured.

Another aspect of the reliability affected by AI misuse during assessment is the consistency of test scores at different phases of assessment (Aloisi, 2023), a situation where students are evaluated across multiple assessments such as continuous assessments, mid-semester examinations, and final examinations. The expectation is that students' performance patterns will remain relatively consistent. However, when AI-tools are used in certain assessments of students, performance patterns may fluctuate dramatically. The inconsistencies make it difficult for educators and assessment experts to accurately interpret student achievement levels.

The psychometric perspective of this review exposes that unreliable assessment scores reduce the credibility of educational measurement. When reliability declines, the confidence that educators and institutions can place in the resulting scores also diminishes. This challenge becomes even more problematic when assessment outcomes are used for high-stakes decisions such as university admission, certification, and employment (Nworgu, 2015).

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2.3. Validity of Students' Assessment Results in the Context of AI-Assisted Cheating

Validity is widely regarded as the most important property of educational assessment. It refers to the extent to which evidence and theory support the interpretations and uses of test scores for their intended purposes (Onyeka, & Onuekwusi, 2019). A valid assessment accurately measures the specific knowledge, skills, or competencies it was designed to assess. Therefore, the misuse of AI tools during examinations threatens several aspects of validity, such as construct validity and predictive validity.

Construct validity is the degree to which a test truly measures the theoretical construct it is intended to measure (Nworgu, 2015). A written essay examination may be designed to assess students' critical thinking ability, and written communication. However, if a student uses an AI system to generate the essay, the resulting response may reflect the capabilities of the AI system rather than the student's own cognitive abilities. The assessment therefore measures a different construct such as the ability to prompt or utilize AI, rather than the intended construct of writing proficiency.

The identified anomaly leads to construct-irrelevant variance, which is a situation where extraneous factors influence students' achievement on a test. In the case of AI-misuse, variables such as internet connectivity, technological proficiency, and familiarity with AI-prompting techniques may influence test scores. These factors negatively influence the measurement process and weaken the reliability and validity of test scores and interpretations.

According to Onyeka and Onuekwusi, (2019), predictive validity refers to the extent to which test scores can predict future performance of an individual (students) or events (programmes) in academic institutions and the society at large. It is pertinent to note that educational assessments are often used as predictors of future success or task engagement. For instance, test results are used to determine students' admission into higher education programs or eligibility for professional training. So, if students obtain artificially inflated scores through AI-assisted cheating using ChatGPT, these scores will fail to predict actual competence in future tasks. This is why graduates enter professional environments without the knowledge and skills their academic records suggest they possess. Over time, this mismatch between the academic records and the competence due to the misuse of AI-tools during testing could undermine trust in educational qualifications and wears down the credibility of educational institutions.

2.4. Fairness in AI-Influenced Assessment

Fairness is one of the basic ethical principles in educational assessment (Anyiam, 2025). This principle posits that all students must be evaluated under conditions that provide equal opportunity to demonstrate their knowledge and abilities. When assessments are fair, there is the certainty that test scores will not be influenced by extraneous factors such as the demographic factors such as socioeconomic status, gender, and age as well as technological access such as AI-assisted tools.

In an AI-driven educational institutions, fairness becomes a significant concern when AI-tools such as ChatGPT are used during tests and examinations, especially where access to such tools are not evenly distributed among students and even teachers. However, some students may possess personal devices, high-speed internet connectivity, and familiarity with AI tools, while others may lack such resources. These differences create unequal testing conditions where technologically experienced students have an unfair advantage over their mates.

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The fairness issue extends beyond students access to AI-technology to include ethical issues. Students who adhere to academic integrity guidelines feel cheated when they observe their mates gaining higher achievement scores through dishonest means. This perception of injustice can wear down students' motivation to engage in honest academic effort and weaken their trust in the examination processes. On the perspectives of educational institutions, fairness is essential for maintaining public confidence in educational certification.

Where employers, professional bodies, and society at large rely on academic qualifications as indicators of competence (Nworgu, 2015), and where the fairness of assessment processes is compromised by widespread AI-assisted cheating, stakeholders will begin to question the legitimacy of academic credentials. This trust that is undermined definitely will have significant consequences for both educational institutions and the society at large.

3.0. METHODOLOGY

This study is qualitative in nature. The authors employed qualitative design in evaluating the intrinsic values of AI-driven technologies in elucidating the psychometric integrity of student assessments for the actualization of sustainable citizenship education. Drawing from the contents and contexts of diverse literature, the study identify and clarify the implications of AI-technologies for sustainable citizenship education.

4.0. DISCOURSES

4.1. Patterns and Implications for Sustainable Citizenship Education

Sustainable citizenship education is education that seeks to develop individuals who possess the knowledge, values, and competencies necessary for responsible participation in the society (Azizah, & Sari, 2025). This education encourages the acquisition of acceptable moral behaviour, critical thinking, social responsibility, and the ability to contribute meaningfully to development of any nation. Therefore, compromising assessment integrity through AI-assisted cheating using ChatGPT can have implications in educational assessment.

First, there will be academic dishonesty which does not support the objectives of education. Anisah, (2019) posits that citizenship education advocates honesty, responsibility, and ethical conduct. Therefore, when students engage in AI-assisted cheating using ChatGPT, they violate these values and develop bad attitudes.

Secondly, there will be compromised testing processes which produce graduates/individuals who lack essential competencies and skills. One of the roles of educational assessments is to determine whether students have acquired the knowledge and skills required of them for effective participation in society (Alt, Naamati-Schneider, & Weishut, 2023). If students ignore the learning process by relying on AI-tools during assessments, they may graduate without mastering analytical reasoning skill, problem solving skills, and communication skills.

Thirdly, Hadjar and Becker (2016) posit that for a sustainable society to be achieved there should be a fair system in which opportunities are allocated based on competence and effort. However, AI-assisted cheating influences this principle by allowing individuals to obtain academic grades without

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genuine learning. This influence reduces institutional trust and the effectiveness of social systems that depend on accurate assessment of competence.

Finally, the reduction of psychometric integrity in educational assessments due to AI-assisted cheating especially when using ChatGPT affects the development of informed and critically engaged citizens. Citizenship education requires individuals who can analyze information, evaluate facts, and make factual decisions in the society. If educational systems fail to help learners acquire these competencies due to failed assessment practices, societies may therefore struggle to address complex social, economic, and environmental challenges.

5.0. CONCLUSION AND RECOMMENDATION

5.2. Conclusion

Since AI has gained ground in education, it is therefore pertinent to know the opportunities and challenges it creates especially in educational assessment. While AI-technologies can support teaching and learning processes, their misuse during examinations can affect the psychometric integrity of student assessments. AI-assisted cheating in any assessment process does not underpin the reliability of assessment results because it introduces inconsistencies and measurement errors. It reduces the validity of test scores by influencing the constructs being measured. It also threatens the fairness of assessment systems by creating unequal testing conditions and ethical disparities among students.

The issues about the psychometric integrity of assessment transcend measurement because it affects the broader goals of education. When assessment systems fail to accurately measure student skills, educational institutions risk producing graduates who does not have skills and ethical values necessary for responsible participation in society. Consequently, the integrity of educational assessment is closely related to the broader objective of sustainable citizenship education.

Addressing these challenges requires a comprehensive approach that includes redesigning assessment methods, strengthening academic integrity policies, promoting ethical AI use, and developing AI-resilient evaluation strategies. Therefore, the effort of education institutions to ensure that educational assessments are reliable, valid, and fair underpins fundamental goal of preparing competent, ethical, and responsible citizens in the era of artificial intelligence.

5.2. Recommendations

The following suggestions were made based on the review

1. Higher institutions of learning should design and implement clear policies on responsible use of artificial intelligence.

2. They should integrate ethics-based instruction that guides students on acceptable and unacceptable uses of AI-technologies in academic work, particularly during examinations.

3. Examination monitoring systems should be improved through secure computer-based testing (CBT) platforms, AI-detection mechanisms, and supervised testing environments to reduce opportunities for AI-assisted cheating.

Conflict of Interest

The authors declare that no conflict f interest exist in this manuscript.

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