
REVIEW OF THE CHALLENGES IN TEACHER'S ASSESSMENT OF PUPILS' PERFORMANCE: THE PROSPECTS AND LIMITATIONS OF AI

¹Eucharia Amaka Onu, ²Onyemaechi Anne Onunze, & ³Dedan Iliya

^{1,2}Department of Educational Foundations, University of Nigeria, Nsukka

¹onuamaka43@gmail.com, +234 8068929372

²onyirubies@gmail.com, +234 8039460945

³Department of Educational Foundations, Kaduna State College of Education, Gidan Waya
dedaniliyaaautason@gmail.com, +234 08038578561

Correspondence Email: onyirubies@gmail.com

Abstract

This paper reviews the challenges in teachers' assessment of pupils' performance, with particular attention to the prospects and limitations of Artificial Intelligence (AI) in education. Teachers' assessment remains central to classroom practice but is often constrained by workload pressures, delayed feedback, and concerns about subjectivity and consistency. Drawing on the literature, this study adopts a structured narrative review to examine how AI-based tools, such as automated grading systems, learning analytics, and adaptive assessment platforms, are being integrated into assessment processes. The review indicates that AI can improve efficiency, provide timely feedback, and enhance scoring consistency. However, these benefits are uneven and context-dependent, especially in settings with limited infrastructure and digital capacity. Concerns related to data privacy, algorithmic bias, unequal access to technology, and the potential erosion of teachers' professional skills remain significant concerns. The paper argues that AI is best used as a support system rather than a replacement for teachers' judgment. It proposes a cautious, context-sensitive integration of AI within a hybrid human-AI system that serves teachers' primary role while leveraging technological advantages. The study contributes to the literature by offering a balanced synthesis and practical recommendations for teachers, policymakers, and schools, among others.

Keywords: Assessment, Challenges, Prospects, Teachers, Artificial Intelligence

Introduction

Assessment of pupils' performance is widely regarded as a key point for effective teaching and learning. It provides the teacher with an understanding of what learners know, what they can do, and where further support is needed. Beyond measurement, assessment increasingly functions as a tool for improving instruction and guiding educational decision-making (Black & William, 2018; Kalim et al., 2026). Assessment is the process of gathering information to form an opinion, taking into account certain criteria (Hooda et al., 2022). The purpose of assessment is to examine pupils' performance during teaching, motivate pupils, design the curriculum/course content, and provide feedback to the teacher, pupils, parents, policy makers, etc. Another important aspect of assessment, as cited by Molina-Soria,

Aparicio-Herguedas, Fuentes-Nieto, & López-Pastor (2026), is that students' learning processes and the quality of their outputs are improved; teachers' instructional competencies are refined; and teaching–learning activities are redirected and improved. In practice, teacher-led assessment is influenced by specific contextual challenges, including large class sizes, limited time, delayed feedback, subjectivity, and institutional demands. These issues make it hard for teachers to give detailed, timely feedback and apply assessment criteria consistently. As a result, efficiency, fairness, and reliability remain central in classroom assessment discussions (OECD, 2021). Key challenges in meaningful and ethical assessment include teachers' attitudes, limited resources, inadequate training, and teachers' experience and beliefs, particularly in Ethiopia (Refu & Chalachew, 2018; Kalim et al., 2026).

Have you noticed the surge in interest in Artificial Intelligence (AI)? This reflects a shared pursuit of solutions to persistent challenges. AI, defined as systems capable of performing tasks that require human intelligence, is now transforming education. It helps analyze data, automate routine processes, and personalize learning (Holmes et al., 2019). Tools like ChatGPT, DeepSeek, Claude, and QuillBot have had a significant impact on higher education (Kalim et al., 2026).

In assessment, AI tools are being used to assist with grading, feedback generation, and performance tracking. While these developments appear promising, there are concerns about pupil data privacy, algorithmic bias, emotional absence, and users not being involved in the development of these tools, etc., for teaching practices. There is an ongoing debate over the extent to which AI can meaningfully support assessment without undermining teachers' professional roles.

With the advent of AI tools, students increasingly rely on them to complete academic tasks (Chan, 2023; Cirstea, 2024). There is growing concern among teachers and higher education administrators about students' heavy reliance, which may lead to increased dishonesty in academic work (Luo, 2024). The implications are that teachers are having difficulty distinguishing between AI-generated plagiarism and non-AI-generated plagiarism. For example, is it academic misconduct if a student independently contributes to the intellectual content but uses Gen AI (Generative Artificial Intelligence) to refine the writing? Like: correct grammatical errors, rephrase sentences, do spelling checks, summarize, etc. Should students' work completed without Gen AI assistance be considered more 'favorable' and 'independent'? These questions not only highlight some of the challenges the teacher is facing but also raise issues of assessment security and validity (Kalim et al., 2026). This underscores the need for teachers to be technologically literate so they can use AI tools to address practices that may

hinder accurate assessment of students' performance. Teachers should leverage AI tools alongside established assessment methods to ensure that students using AI do not harm their learning or gain unfair advantages over peers (Gundu, 2024). AI has great potential to personalize learning and engage students, but its effects on assessment require strategic reconsideration (Gonsalves, 2025; Arslan, Lehman, Tenison, Sparks, López, Gu, & Zapata-Rivera, 2024).

This paper examines the challenges, potential, and limitations of AI in assessing pupils' performance, arguing for a balanced approach where AI supports rather than replaces teacher judgment. To guide the discussion, the paper addresses the following question: What challenges affect teacher-led assessment of pupils' performance? How can AI contribute to assessment practices? What risks and ethical concerns are associated with AI? How can AI be integrated to strengthen, not weaken, professional practice?

Methodology

This study conducted a structured narrative review to synthesize research on assessment and AI in education. We selected literature that highlights recent developments in both fields. We used sources from peer-reviewed journals indexed in major academic databases. The review analyzes teacher-led and AI-supported assessment tools and their impact on teaching and learning. It draws on both empirical and conceptual studies to provide a broad view. Using a thematic approach, it organizes findings by challenges of traditional assessment, AI functions, benefits, risks, and practice implications. The review is not exhaustive and includes only English-language studies available as of the review date. It aims for a balanced, critical synthesis of current knowledge.

Challenges in Teacher-Led Assessment

Teacher-led assessment faces practical and systemic challenges. One key issue is workload, as teachers manage many pupils and administrative tasks, leaving little time for detailed assessment. As a result, feedback may be delayed or simplified tests may be used, neither of which may fully capture learning. In addition to workload, subjectivity presents challenges. In open-ended tasks, teachers may interpret answers differently depending on their expectations or experiences. While experience can improve judgment, achieving complete objectivity is difficult (Brookhart, 2019).

Research identified that the main problems in assessment are subjectivity, low validity, inconsistent grading, and unclear criteria (Tueta, 2015). Often, only a few of the aspects that

should be assessed are included, while others are assessed only partly or not at all. For instance, there is minimal focus on how students understand, analyze, explain, or connect knowledge, or how they comment on and exemplify it. This limited approach is largely due to teachers not being fully trained to meet curriculum needs and lacking knowledge of assessment methods (Shaikh et al., 2024). Without professional development, gaps in teachers' assessment literacy persist, reducing the quality of assessments and how results are used to improve instruction. School administration's lack of interest also limits teacher capacity; Kalim et al. (2026) found that teachers struggled to manage assessments well. High student-to-teacher ratios and limited time further constrain effective communication. Systemic issues, like poor infrastructure and inadequate digital tools, add to the challenge. Even when assessment data are gathered, they are rarely analyzed or used to improve teaching (Arslan et al., 2024).

AI in Assessment: Functions and Contributions

- **Personalized Education Platforms:** these AI tutors provide teachers with an overview of each student's learning progress, strengths, and weaknesses, such as century46, Google Meet, Zoom, and Telegram. Also, AI tools can provide instant, personalized feedback to students, helping them identify their strengths and weaknesses.
- **Automated grading and feedback streamline assessment:** AI algorithms can accurately grade assignments, quizzes, and exams—including essays and multiple-choice questions—thereby freeing teachers to focus on more important tasks. In analytics and performance tracking, Data Analytics tools enable the teacher to monitor student progress, identify learning patterns, and make data-driven instructional decisions.
- **Adaptive/personalized assessment systems;** AI tools can provide instant, personalized feedback to students, helping them identify areas of strength and weakness. AI tools like Docebo provide a variety of efficient, customized learning programs, including automated assignment generation based on learners' skills and the creation of course content, games, etc., with linkage to Assessment for Learning (continuous feedback orientation); there are Fireflies tools that allow teachers to design interactive presentations and quizzes, boosting student participation.
- **Brief linkage to Assessment for Learning (continuous feedback orientation);** continuous assessment serves as a vital pedagogical tool that shifts the focus from final, high-stakes testing to ongoing evaluation, enhancing student learning throughout the instructional process (Gonsalves, 2025). Rather than merely evaluating performance at the end of a course, this approach integrates assessment into daily, functional

teaching—utilizing quizzes, classroom discussions, and projects—to monitor student understanding and provide regular, constructive feedback (Black & Wiliam, 2026). There are Fireflies tools that allow teachers to design interactive presentations and quizzes, boosting student participation. (Sellier & An, 2020)

Prospects of AI Integration

The development of AI in education offers significant benefits, changing the way we teach and learn. The effect of artificial intelligence on the future is inevitable and complex, too. Artificial intelligence can support human professionals by providing real-time analytics and insights. AI systems can process and analyze large amounts of data quickly and accurately. Thus, they can provide personalized recommendations and solutions by supporting decision-making across areas such as health, finance, education, and marketing, thereby delivering more efficient and accurate services (Arslan et al., 2024; Holmes, 2019). At the same time, new employment opportunities are emerging for data analysts, data engineers, programmers, and website designers (Williamson & Kizilcec, 2022; Molina-Soria et al., 2026). Through continuous learning, reskilling, and personal development, the great benefits of AI can be accessed and applied to mitigate the challenges that are bound to arise in education.

In another study by Li, Yang, & Fang (2025), integrating AI into assessment offers several potential benefits, though these should be interpreted cautiously. While AI can improve efficiency and consistency—particularly in large-scale settings by reducing marking time and applying predefined criteria systematically—challenges remain, such as ensuring fairness and transparency (Nandi et al., 2025). AI can support personalized learning, allowing assessment to reflect individual progress rather than uniform standards (Kalim et al., 2026), but the accuracy of personalization still requires critical review. Additionally, although AI-generated data can inform instructional decisions and improve accessibility for diverse learners (Holmes et al., 2019), implications for teacher oversight and data privacy should also be considered.

Risks and Ethical Concerns

The use of AI in assessment raises several specific concerns that require careful consideration. Data privacy is a major issue, as AI systems depend on large volumes of student information, exposing it to potential breaches or misuse. Ensuring secure data storage, proper access controls, and responsible data sharing are essential (Kalim et al., 2026). The digital divide also poses a challenge: in developing contexts where access to devices or the internet is limited, some students may be excluded from AI-driven assessments. There is a risk of

algorithmic bias, in which AI systems may reinforce or perpetuate biases, leading to unfair outcomes for certain student groups (Nandi et al., 2025). Concerns about teacher deskilling have been raised, especially when automated systems replace opportunities for teachers to use their professional judgment in interpreting results or offering feedback. Finally, the lack of transparency in some AI systems makes it difficult to understand how assessment decisions are made, reducing trust and hampering accountability, as neither students nor educators can easily interpret decision-making processes (Li et al., 2025).

Discussion: A Balanced Perspective

The findings demonstrate that AI is poised to play a crucial role in supporting assessment practices, but its role must be precisely defined. AI significantly boosts efficiency and delivers valuable data, yet it cannot capture the full complexity of human learning, including social, emotional, and contextual factors. A hybrid human–AI approach provides a robust and balanced solution. In this framework, AI handles routine tasks and data analysis, while teachers firmly retain control of interpretation, feedback, and decision-making. This approach decisively acknowledges both the strengths and constraints of technology, while upholding the teacher’s central role in assessment.

Recommendations

Based on the review, the following recommendations are proposed:

- Strengthen teacher training in both assessment and AI use.
- Restrict access to online AI tools on center devices used in the education setting.
- Invest in infrastructure to support equitable access.
- Encourage context-sensitive implementation strategies.
- Maintain teacher oversight in all AI-supported assessments.
- Improve data protection and governance frameworks.
- Promote ongoing evaluation of AI tools in real classroom settings.

Conclusion

AI creates new opportunities to enhance assessment practices, especially in terms of efficiency and data utilization. However, these advantages are not guaranteed and hinge on effective implementation. Ultimately, assessment is each teacher’s responsibility: to evaluate the impact of their instruction on students and identify specific teaching or assessment adjustments to maximize student potential. Amid ongoing challenges to teacher-led assessment, large class size, delayed feedback, subjectivity, and unskilled teachers,

uninterested school administrators, inadequate infrastructure, among others, this paper argues that AI should serve as a supportive tool within a comprehensive assessment system that prioritizes professional judgment. A blended approach that leverages technology alongside human insight is most likely to yield fair, meaningful, and sustainable assessment results.

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