AUTOMATED ASSESSMENT AND ANALYSIS: RAPID ASSESSMENT OF TESTS AND ASSIGNMENTS THROUGH AI, OPTIMIZING THE LEARNING PROCESS

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ARTICLE INFORMATION

ARTICLE HISTORY:
Received: 16.03.2026
Revised: 17.03.2026
Accepted: 18.03.2026

KEYWORDS:
Artificial intelligence in education, automated assessment, AI-based assessment, Automated assessment systems, personalized feedback, adaptive assessment, teacher-supervised AI.

ANNOTATION

This article explores the application of artificial intelligence (AI) technologies in the field of automated assessment and analysis in the educational process. AI-based systems allow for quick and objective assessment of simple tests, open-ended questions, essays, coding assignments, and even handwritten work, reducing the time teachers spend on assessment by 37–50%, while providing real-time feedback to students. The article examines global trends (as of 2025–2026), such as adaptive grading, multi-modal assessment, and agentic AI integration.

Introduction

Artificial intelligence (AI) is revolutionizing the assessment process in education. Today, in 2026, AI-powered systems will be able to automatically grade assignments ranging from simple tests to essays, open-ended questions, coding assignments, and even handwritten assignments. This saves teachers time, provides students with instant and personalized feedback, and helps personalize and optimize the learning process. For example, AI systems can reduce the time teachers spend on assessment by up to 37%, allowing them to focus more on their core tasks – motivating students and providing individualized attention. At the same time, global applications of AI in education are being used in 70% of schools, especially at the K-12 level, which helps reduce teacher attrition.

Historical development and basic principles. The use of AI in automated assessment began in the early 2010s with the development of machine learning models (e.g., NLP – Natural Language Processing). Initially used for simple multiple-choice tests, by the late

2020s, it became possible to assess complex written work and code using generative AI (GPT models). In 2026, AI systems will not only grade, but also perform adaptive grading – that is, they will change the difficulty of the task depending on the level of the student and provide real-time analysis. These systems work on the basis of rubrics (assessment criteria), reducing human error and ensuring objectivity. For example, AI will compare the student's answer with thousands of previous examples and give an accurate grade.

Main advantages (benefits)

-Speed and time savings: Teachers can reduce the time they spend on grading by up to 50% (e.g., data from the Gradescope platform). It also reduces the overall workload by 37%, which reduces teachers' weekly grading time by 10-20 hours.

-Objectivity and consistency — Human error and subjective evaluation are reduced, and grading is ensured using the same rubric. AI reduces bias and ensures fair grading.

-Instant feedback — Students receive immediate feedback and suggestions for improvement, which speeds up learning. For example, formative feedback loops allow for rapid revision.

-Flexibility for large groups — Easy to implement in online courses (MOOCs) with thousands of students, especially in STEM subjects (mathematics, programming).

-Analysis and prediction — AI identifies students' weaknesses and offers the teacher an individual approach. Predicts the risk of failure through predictive analytics.

-Additional: Adaptive and multi-modal assessment — According to 2026 trends, AI adapts tasks to the learner's level and assesses different formats (text, images, video)

Popular global examples and platforms (as of 2026); gradescope (by Turnitin) One of the most widely used tools. Used by universities (Stanford, Cornell, Purdue, UC San Diego, etc.); AI-powered answer grouping, auto-scoring, and partial essay analysis; highly effective for STEM subjects (math, coding) and written assignments. Uses OCR (Optical Character Recognition) for bubble sheets and handwritten assignments; teachers claim it speeds up grading by 50%. New agentic AI integration coming in 2026 to grade complex assignments.

Opportunities and status in the context of Uzbekistan. AI is being actively implemented in education in Uzbekistan, but automated assessment is still at an early stage. According to the "Uzbekistan-2030" strategy, 500 thousand people will be trained in AI by 2026, bringing the total to 5 million. New Uzbekistan University, in collaboration with MIT, is introducing AI textbooks, which include assessment systems. Studies have been conducted among students in the field of pedagogy (for example, the role of AI in assessing educational achievements). Auto-assessment of simple tests on online platforms (for example, in distance learning systems) is already being used in higher education institutions. Global platforms (Quizizz, Google Forms + AI add-ons, or Moodle + AI plugins) can be quickly used by adapting them in the Uzbek language. In the future, it is planned to integrate AI assessment on national platforms ("One million Uzbek programmers" or "Kelajak" centers).

UNESCO and UNICEF projects are training teachers on AI tools. A supercomputer cluster is being built in partnership with NVIDIA to accelerate AI assessments. Potential: AI labs could be opened in schools, and local AI assessment tools could be created through startup competitions.

Main problems and limitations.

1.Problem:

Accuracy and reliability - can make mistakes in essays and complex answers (especially at low scores), reaches 93% accuracy

Bias and unfairness - can come from bias in the database

Uzbek language support - Many models work well in English, weaker in Uzbek

Ethical issues - students not doing their own work, over-reliance on AI

Privacy - student data security

Additional: Resource constraints - technological infrastructure is insufficient in developing countries

Solutions include teacher supervision, training with rich cultural data, local models or fine-tuning, increasing AI literacy, developing rules, implementing standards similar to GDPR, government projects, and international cooperation.

Conclusions and recommendations Automated assessment through AI will free teachers from "paperwork" and allow them to focus on their main task - individual approach to students and motivation. In 2026, agentic AI and multi-agent systems will further develop this area, making education more effective. To implement this in the Uzbek education system:

Start with small pilot projects (for example, testing Gradescope or similar tools in one faculty or class).

Train teachers in the use of AI, through UNESCO projects.

Create local models by expanding the Uzbek language database.

Open AI laboratories in schools and use NVIDIA partnership, in accordance with the government's 2030 strategy.

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