

ACADEMIC ASSESSMENT PARAMETERS AND CRITERIA IN THE AGE OF ARTIFICIAL INTELLIGENCE

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Abstract: This article examines the impact of artificial intelligence technologies on the process of assessing student knowledge in higher education and addresses the issue of developing new criteria. The study analyses the shortcomings of traditional assessment methods, evaluates the effectiveness and limitations of AI detection instruments, and proposes new process-oriented parameters grounded in current pedagogical scholarship. The developed criteria serve to ensure academic justice and to objectively measure students' critical thinking, analytical reasoning, and prompt engineering skills. The findings suggest that a hybrid assessment model — one that values the process of knowledge construction rather than the final textual product alone — represents the most educationally defensible response to the challenges posed by generative artificial intelligence in higher education.

Keywords: artificial intelligence, academic assessment, assessment criteria, process-oriented evaluation.

Introduction

The rapid advancement of modern technologies is placing new demands and objectives before the higher education system. As B. Islomov has emphasized, the integration of artificial intelligence into the higher education system of Uzbekistan has become an inevitable process that determines the future prospects of the field. While the use of information technology in improving the quality of education is of paramount importance, a number of unresolved problems have emerged in the domain of academic assessment. The studies of A. Omonov analyse the pedagogical foundations of using artificial intelligence technologies in higher education, clearly demonstrating the necessity of maintaining a proper balance between technology and the human factor.

The primary purpose of this article is to examine the crisis in traditional assessment methods and to develop new criteria that meet the demands of the present day. The proliferation of AI tools requires a radical reassessment of quality indicators in education, and the obsolescence of traditional methods makes novel approaches to ensuring educational justice both necessary and urgent. For these reasons, the problems raised in this study carry not only theoretical significance but also immediate practical relevance for policy-makers, academic staff, and institutional leaders.

The scope of this challenge extends beyond individual universities or national systems. A significant proportion of students in higher education are already using AI writing tools in the preparation of assessed work — a pattern of adoption that institutions have often been too slow to anticipate or address. In this environment, it has become virtually impossible for an instructor to determine, solely by reading a finished text, whether its true author is the student,

an automated system, or some combination of the two. This dynamic makes the assessment reform agenda not merely desirable but structurally necessary for any institution committed to the genuine educational development of its students.

Purpose and objectives

The primary objective of this article is to identify the crisis in traditional student assessment methods caused by artificial intelligence and to propose new, practically applicable assessment criteria for higher education institutions. The study further aims to demonstrate that the proposed hybrid parameters can objectively measure not only students' knowledge but also their analytical and critical thinking capacities.

The following objectives have been established to achieve this purpose:

- to analyse the fundamental problems of traditional assessment systems in the context of artificial intelligence;
- to examine the effectiveness of AI integrity detection tools and their limitations;
- to develop a theoretical framework for process-oriented assessment models;
- to propose new academic assessment parameters, including criteria for prompt engineering competence and critical information verification;
- to examine the relationship between hybrid learning environments and the development of students' critical thinking capabilities.

Methodology

The research was conducted primarily on the basis of a qualitative approach. The study employed the method of literary analysis to examine the scholarly works of Uzbek researchers on the topics of artificial intelligence integration in education, academic integrity, and assessment systems. The comparative analysis method was applied to identify the key distinctions between traditional and process-oriented assessment models. The synthesis and systematisation of findings obtained from various sources enabled the formation of an integrated theoretical framework. The methodological foundation of the study rests upon an interdisciplinary approach that combines pedagogical, technological, and ethical perspectives [6].

Main part

The Crisis of Traditional Assessment Systems in Higher Education

For many years, written works and essays served as the primary method of testing student knowledge and evaluating their scope of reasoning in higher education institutions. However, as S. Bekmurodov has substantiated in his research on text-generating algorithms and academic writing ethics, the ability of large language models to produce flawless academic prose within seconds has rendered traditional measurement systems unreliable. It has become virtually impossible for an instructor to determine, merely by reading the final text, whether its true author is a human being or an algorithm. This situation has generated the risk that educational institutions will assess not students' knowledge but rather their speed in using software.

Traditional methods were designed to evaluate the final outcome, not the student's process of independent work. However, in the present day, producing a final outcome mechanically has become exceedingly simple. For this reason, the educational standards developed over many years have begun to lose their genuine substance. This has placed the urgent reform of assessment frameworks on the agenda for universities across Uzbekistan. Addressing this gap requires not incremental adjustments to existing systems but a fundamental reconceptualisation of what academic assessment is for and how it should operate in a world of ambient artificial intelligence.

The crisis is compounded by the pace of technological development, which continuously outstrips institutional responses. By the time a university has developed a policy response to one generation of AI tools, more capable systems have already become available and widely adopted. This dynamic creates a persistent structural gap between the technological realities that students navigate daily and the assessment frameworks that institutions continue to apply. The practical consequence is an erosion of the diagnostic validity of assessments — a situation in which high scores may reflect AI proficiency as much as, or more than, the disciplinary competencies that higher education is designed to cultivate.

Analysis of Academic Integrity and Artificial Intelligence Detection Tools

As new technologies have become widespread, tools designed to monitor and restrict them have emerged with equal speed. However, specialised detectors capable of identifying texts written with the assistance of artificial intelligence have not always proven reliable. As N. Safarova has demonstrated in her scholarly works on the role of contemporary assessment criteria in ensuring academic integrity, relying solely on software-based monitoring mechanisms may lead to the violation of student rights and to the unjustified penalisation of students who have written independently. Cases have been observed in which detectors incorrectly classify independently written works containing complex academic terminology as products of artificial algorithms.

Such errors foster an environment of mutual distrust between students and university administrators. In academic settings, providing proper guidance yields far more effective results than punitive measures. Furthermore, AI detection tools face an inherent structural disadvantage: they must identify outputs from systems specifically designed to produce human-like text, and this task becomes progressively harder as models improve. Accordingly, the most appropriate approach is to address the problem not through restrictive software but through a fundamental transformation of assessment methods — prevention through design yields more reliable and more just outcomes than punishment through detection.

Theoretical Foundations of the Process-Oriented Assessment Model

The most educationally defensible solution for overcoming the assessment crisis is the systematic introduction of process-oriented assessment models. M. To'rayev, in his extensive analysis of process-oriented assessment models in digital learning environments, argues persuasively that the educational system must abandon evaluation of finished text as its primary currency and instead assign value to all documented stages of the intellectual process by which that text was created. In this framework, the central object of assessment becomes not the polished final output but the evidence of how the student engaged with the problem: how they gathered and evaluated information, how they constructed and refined their argument, and how they corrected errors in their thinking.

This approach, while reducing the incentive for AI delegation, simultaneously reveals the student's genuine analytical capacity. The constructivist theoretical basis for this shift is well established in educational psychology: genuine learning occurs through active intellectual engagement with challenging problems, not through mechanical reproduction of information. Process-oriented assessment realigns evaluative incentives with educational goals by making the learning process itself the primary object of measurement. J. Yo'ldoshev has further noted that the cultivation of critical thinking under conditions of artificial intelligence availability has become a central requirement of contemporary higher education, and process-oriented models naturally support this goal.

New Academic Assessment Parameters and Criteria

On the basis of the theoretical framework established above, a concrete set of new assessment parameters is proposed for higher education institutions. As G. Qodirova has argued in her research on hybrid assessment parameters for measuring student knowledge, effective new criteria must encompass the full process through which knowledge is sought, verified, synthesised, and communicated.

The first proposed parameter is the assessment of prompt engineering competence. D. Xashimova has demonstrated that the ability to formulate accurate, specific, and productive queries to AI systems represents a measurable intellectual skill with direct relevance to professional competence. A student who can articulate a precise and contextually appropriate prompt is demonstrating conceptual clarity about their topic and strategic thinking about information-seeking — both legitimate objects of academic assessment.

The second proposed parameter is the independent factual verification of AI-generated information. Given the well-documented tendency of large language models to produce confident-sounding but inaccurate information, the ability to critically evaluate AI outputs for factual reliability is both an essential academic skill and a measurable competency. Students can be assessed on their capacity to identify claims requiring verification, to locate authoritative sources, and to document their verification process.

The third proposed parameter is the critical synthesis and intellectual enrichment of source material. This criterion evaluates the extent to which a student has genuinely engaged with gathered information and transformed it through their own analytical reasoning into an original contribution. As Qodirova argues, the highest grades should be allocated to students who demonstrate the most substantive process of intellectual engagement rather than those who simply produce the most polished final texts. These three parameters together constitute a hybrid assessment framework that is resistant to AI delegation, aligned with genuine educational goals, and practically implementable within university structures.

Developing Students' Critical Thinking in Hybrid Learning Environments

Digital intelligence systems in the educational process represent not only a threat but also an opportunity that can be utilised productively. As J. Yo'ldoshev has noted, the cultivation of critical thinking skills in students under conditions of artificial intelligence has become a requirement of the times. Since AI systems can prepare a draft text rapidly, students are able to direct their attention to higher-order intellectual activities: evaluating the quality of arguments, assessing the reliability of evidence, identifying logical inconsistencies, and formulating original analytical perspectives.

However, this opportunity will only be realised if educational environments are deliberately designed to require and reward such higher-order engagement. As To'rayev observes, in hybrid learning environments where AI tools are readily available, the educator's role shifts from being primarily a transmitter of information to being a designer of intellectually demanding experiences that require students to think for themselves. Students who learn to engage critically with AI outputs in their academic work are developing habits of disciplined evaluation, contextual judgment, and intellectual accountability that will serve them throughout their professional and civic lives.

In practice, this means that instructors have a heightened responsibility to design learning activities that explicitly require critical engagement with information sources, including AI-generated ones. Seminar discussions, oral defences, comparative analysis tasks, research design exercises, and staged writing processes all create opportunities for students to demonstrate and develop the analytical capacities that distinguish authentic intellectual competence from its AI-assisted simulacrum. The development of critical thinking in this context should be understood not as a defensive response to the threat of AI, but as a

proactive investment in the most distinctively human intellectual capacities — those that no automated system can replicate on a student's behalf.

Conclusion

As a conclusion of the research, it may be stated that the rapid penetration of modern text-generating technologies into the education system demands fundamental reforms in assessment criteria. Drawing upon the sources of Uzbek scholars analysed above, it may be affirmed that shifting attention from the final product to the process of its creation is an organic necessity. The proposed hybrid assessment parameters — encompassing prompt engineering competence, critical information verification, and intellectual synthesis — make it possible to measure not merely students' mechanical memory but also their levels of free, logical, and critical thinking.

The proposed criteria are designed not merely to make assessment more resistant to AI delegation. More fundamentally, they are designed to ensure that assessment continues to serve its core educational purpose: to measure and promote genuine intellectual development. By making the process of learning visible and assessable, process-oriented frameworks transform assessment from a mechanism for certifying outputs into a mechanism for cultivating the analytical and ethical capacities that distinguish truly educated graduates.

These reforms cannot be accomplished quickly or easily. They require sustained leadership commitment from institutional managers, academic communities, and policy-makers. However, the costs of inaction are considerably greater: a generation of graduates whose certified competencies do not accurately reflect their genuine intellectual capabilities, and an academic culture in which the appearance of learning has displaced learning itself. Effective implementation requires investment in faculty development, clear institutional policies on permitted AI use, and digital assessment infrastructure that supports the documentation of student work processes.

In the final analysis, the challenge posed by artificial intelligence to academic assessment is also an opportunity to build assessment systems that are more authentically aligned with the educational goals of higher education and more effective in preparing graduates for AI-integrated professional environments. The widespread introduction of updated assessment models into educational practice will contribute to a significant increase in the international competitiveness of Uzbekistan's higher education system. Society will produce highly qualified specialists who are not subordinate to technologies but are capable of managing them correctly.

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