

USING INFORMATION TECHNOLOGY IN HIGHER EDUCATION FOR STUDENT ASSESSMENT

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ABSTRACT	KEYWORDS
<p>This article explores the transformation of approaches to pedagogical assessment in higher education under the influence of global digitalization and informatization. The paper examines the key benefits of implementing IT tools, such as increased objectivity and transparency of assessment, the possibility of implementing adaptive testing, and the automation of monitoring individual student progress. Particular attention is paid to the advantages of implementing ICT, such as assessment objectivity, timely feedback, transparency, and the possibility of individualizing the educational process. It also identifies existing challenges and limitations associated with the technical and organizational aspects of using information technology. The paper concludes by highlighting the importance of digital solutions for improving the efficiency and quality of assessment in modern universities.</p>	<p>Higher education, information technology, pedagogical assessment, ICT, learning management systems (LMS), digitalization of education, monitoring of academic achievements.</p>

Introduction

The modern educational paradigm, defined by globalization, standardization, and the active adoption of ICT, dictates the need to modernize approaches to pedagogical assessment. These trends not only create fundamentally new requirements for assessment quality but also open up technological opportunities for optimizing and automating assessment procedures.

Nowadays educational process undergoes major changes. It is more student-centered, student-friendly, the whole educational process is centered around student, his needs, focuses on his strengths and desires, provides low-stress level environment. With the changes in educational process there are changes in assessment, especially formative assessment. Formative assessment matches to the modern needs of students more than any other types of assessment, because it gives students feedback, it helps him to keep track of his results and allows him to adapt and improve during the educational process. Student assessment traditionally involves assessing their level of mastery of educational programs, identifying strengths, and identifying areas for further improvement. Information technology is

enabling a significant transformation of this process, offering modern solutions for automation, increased efficiency, and increased accuracy.

Today, various digital assessment methods are used:

- ✓ Online testing is a self-administered computer-based exam that includes various types of test tasks (closed questions, fill-in-the-blanks, short answers).
- ✓ Electronic portfolios are collections of a student's work that demonstrate his or her achievements throughout the entire period of study.
- ✓ Big Data Analysis — monitoring student activity on the university platform, analyzing class statistics, frequency of lecture attendance, and participation in discussions.
- ✓ A learning management system (LMS) is a universal platform such as Moodle, Canvas, and Blackboard that allows for distance learning, course delivery, and assessment.

These technologies make assessments faster, more accurate, and less dependent on human factors.

Transparency of procedures, availability of organizational and methodological materials on control measures and assessment results, clear presentation of academic achievements, and the ability to complete assignments remotely, facilitated by ICT, contribute to increasing students' motivation for academic activity.

Materials and Methods

The use of ICT offers a number of additional opportunities for the individualization of learning, the organization of formative assessment and self-assessment. New interactive learning and assessment tools (forums, case studies, web quests) suggest a qualitatively new activity of students – their creative interaction in the course of mastering information, the creation of a new product and its promotion (joint preparation of demonstration materials, presentations, videos, etc.). New opportunities are provided by the use of video (video cases, webinars and film fragments containing typical situations subject to analysis) and online tests with a developmental component in assessment procedures (including self-assessment), for example, with subsequent analysis of test results and essay writing. Internet services make it possible to organize formative assessment using a virtual area for student collaboration. In the process of this activity, students' information competencies are developed.

In the assessment of learning outcomes, ICT is used as a tool for assessment, development of assessment tools, implementation of assessment procedures, and organization of the educational process. It also serves as an element of the university's information and educational environment. Its effectiveness depends on the organization's material and technical resources and the qualifications of its personnel.

Here is an overview of modern student assessment programs and systems that are relevant and actively used in educational institutions and corporate training.

Main types of student assessment systems

Category	Examples of systems	Brief description
LMS (Learning Management Systems)	iSpring LMS, Proaction.pro, Skillz LMS, CDO.LMS, 3KL	Platforms for learning management, course creation, testing, analytics, and student progress monitoring. Support integration with other systems, automated assessment, and reporting.
Testing systems	INDIGO, Online Test Pad, StartExam, Testand, INtest, myQuiz	Specialized services for creating tests, surveys, crosswords, and complex assignments. They allow you to automate testing, analyze results, and generate reports.
Proctoring platforms	Examus	Remote testing systems with integrity control (audio, video, and screen monitoring), violation recording, and automatic report generation.
Corporate HR platforms	Proaction.pro, Beehive, Dilys	Solutions for personnel assessment and development, 360-degree assessments, and the creation of individual development plans.
Educational platforms	RuLeS, OLYMPOX: Online, LEARN THE WHEEL	Platforms for training and testing in accordance with industry standards (e.g., occupational safety, engineering), with support for simulators and training equipment.

The choice of system depends on the educational institution’s goals: scalable LMS and proctoring platforms are suitable for mass testing, while HR platforms with analytics and individual development plans are suitable for corporate training. It’s important to consider data security, integration, and ease of use requirements.

Results and discussion

Using specialized applications for student assessment provides teachers with a number of significant advantages:

- ✓ **Saving time.** Automating the marking of tests, surveys, and assignments significantly reduces the time spent on routine tasks. Teachers don’t have to manually grade hundreds of assignments—the system automatically calculates scores, generates reports, and even provides initial feedback.
- ✓ **Objectivity and minimization of subjectivity.** Electronic systems reduce the influence of human factors, ensure consistency of evaluation criteria and reduce the likelihood of errors or bias.
- ✓ **Fast feedback.** Students can instantly see their results, and teachers can quickly analyze common mistakes and adjust the learning process.
- ✓ **Analytics and statistics.** The apps provide detailed performance statistics: which questions are challenging, the dynamics of a group’s or individual student’s performance, and knowledge gaps. This allows for informed teaching decisions.

✓ **Flexibility and mobility.** Teachers can create, edit, and administer tests from anywhere and on any device. Students can also complete assessments remotely, which is especially important in blended or online learning.

✓ **Variety of formats.** Modern services support various types of tasks: multiple-choice tests, open-ended questions, essays, crosswords, interactive exercises, and multimedia tasks. This makes the assessment process more varied and engaging.

✓ **Motivating students.** Online tests are often perceived as more modern and engaging, which increases engagement and interest in the subject. The ability to track one's progress encourages independent study.

✓ **Integration with other systems.** Many applications easily integrate with electronic journals, LMS, and other educational platforms, simplifying the administration of the educational process.

Overall, specialized applications make the assessment process more transparent, efficient, and modern, and allow teachers to focus on the content of the learning process and individualized approaches to students.

Despite numerous advantages, the use of electronic assessment systems is associated with a number of risks that are important to consider when implementing them in the educational process:

✓ **Technical failures and infrastructure dependence.** Any technical issues (internet outages, server failures, software problems) can lead to testing failure or data loss. This is especially critical during mass assessments and exams.

✓ **Insufficient digital literacy of teachers and students.** Not all teachers and students are comfortable using modern digital tools. This can lead to stress, errors in tests, and increased workload for teachers due to the need for technical support.

✓ **Health risks.** Long-term work with electronic devices leads to rapid fatigue, deterioration of vision, professional burnout of teachers, and decreased concentration in students.

✓ **Problems with personal data protection.** Electronic systems collect and store large volumes of information about students and faculty. Inadequate protection of this data can lead to leakage or unauthorized access.

✓ **Decreased motivation and psychological risks.** Automated systems do not always take into account the individual characteristics of students, which can lead to decreased motivation, the development of a fear of mistakes, and even psychological problems.

✓ **Risk of falsification of results and use of AI.** Students may use neural networks and other tools to generate answers, making it difficult to verify their actual knowledge and competencies. Existing anti-plagiarism systems are not always able to detect such work.

✓ **Ethical risks and discrimination.** Using artificial intelligence to predict academic performance or perform automated grading can lead to discrimination against certain groups of students if the algorithms are trained on biased data.

✓ **Loss of the "human" factor.** Excessive automation can reduce the role of the teacher in the educational process, which will negatively impact the development of students' social and communication skills.

✓ **Communication difficulties.** Interaction via digital platforms sometimes leads to misunderstandings between teachers, students, and parents, as well as a blurring of the boundaries between work and personal time.

To minimize these risks, it is recommended to combine electronic and traditional assessment methods, provide digital literacy training to teachers and students, pay attention to data protection and ethical issues, and maintain a balance between automation and personal teacher involvement.

Only a combination of new technologies and the professional experience of teachers can ensure a high level of training for future specialists.

Conclusion

Information technology plays a vital role in improving the quality of education and developing the potential of younger generations. Its further development must go hand in hand with addressing ethical issues and ensuring security, creating favorable conditions for the qualitative growth of the entire higher education system.

Thus, the use of information technology in higher education represents an important stage in the development of the educational system, making learning more effective and accessible. However, this process requires a careful analysis of the benefits and risks to avoid negative consequences and maximize the benefits for all participants in the educational process.

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