



MODERN METHODS OF DIAGNOSING THE KNOWLEDGE, SKILLS, AND QUALIFICATIONS OF LEARNERS

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Abstract: This article analyzes modern psychological and pedagogical methods for evaluating and diagnosing the knowledge, skills, and qualifications (KSQ) of learners. During the research, the psychological shortcomings of the traditional assessment system are revealed, and the cognitive and emotional advantages of innovative methods such as adaptive testing, portfolio, case-study, and simulation diagnostics are studied.

Keywords: psychodiagnostics, cognitive processes, adaptive testing, competence, formative assessment, case-study, portfolio method, test anxiety.

Introduction

In the 21st century — a period of rapid development of information technologies and intellectual competition, the main task facing the educational system is not simply to raise individuals who "memorize information," but to bring up a well-rounded personality capable of making independent and creative decisions in unexpected situations and possessing problem-solving skills. This competency-based approach, in turn, necessitates the development of entirely new, modern psychological and pedagogical mechanisms for assessing and diagnosing learners' knowledge, skills, and qualifications.

According to the analysis of educational psychology, traditional assessment methods (oral examination, strictly standardized written works, and closed-type tests) widely used in practice for many years have mainly served to measure only the learner's short-term memory and the ability to reproduce information. From a psychological point of view, such summative (final) assessment forms have a number of serious drawbacks. First, they cannot fully demonstrate the learner's "skill" to apply the acquired knowledge in practice and the ability to turn it into an automated "qualification." Second, traditional exams cause strong psycho-emotional pressure, "test anxiety," and the "fear of making mistakes" syndrome in most students. In such a stressful state, an individual's real intellectual potential artificially decreases, and the grade obtained does



not objectively reflect their actual knowledge. Moreover, studying solely to get a grade suppresses the learner's intrinsic motivation, turning the educational process into a mere obligation.

According to modern educational psychology and L.S. Vygotsky's theory of the "Zone of Proximal Development," the diagnostic process should not be a tool for punishing or simply sorting students, but should have a formative character that supports and guides their cognitive development. Today, in international educational experience (in assessment programs like PISA and TIMSS), priority is given not only to the student's memorized information but to measuring the level of their logical thinking, social intelligence, teamwork, and the ability to apply acquired knowledge in solving non-standard problems (soft skills and hard skills).

Therefore, the main purpose of this article is to scientifically and psychologically analyze innovative methods (adaptive testing, portfolio, case-study, gamification) that diagnose learners' knowledge, skills, and qualifications objectively, impartially, and most importantly, without psychological pressure, as well as to reveal the advantages of integrating them into the educational process.

Research Methodology (Methods) Since diagnosing learners' knowledge, skills, and qualifications is not only a pedagogical but also a deep psychological process, a complex (mixed) methodological approach was used in conducting this research. The cognitive and emotional states of learners in traditional and innovative assessment environments were taken as the object of research, and the process was studied using the following scientific methods:

Comparative psychological analysis: Through this method, which forms the theoretical basis of the research, the impact of summative (punitive) and formative (supportive) assessment types on the student's psyche was compared. The difference between the mechanisms of "memory based on memorization" in traditional testing and "operative and critical thinking" required in situational analyses (case-study) was elucidated based on psychological criteria.

Empirical observation and psychodiagnostics: The direct observation method was used to study the mental state of students during traditional exams and modern adaptive testing processes. At the same time, standardized psychological questionnaires (e.g., a modification of C. Spielberger's State-Trait Anxiety Inventory) were used to measure pre-exam stress and the level of "test anxiety" among learners. This method served to numerically demonstrate the negative emotional consequences of traditional assessment.

Hermeneutic and product activity analysis method: Applied in studying the learners' "Portfolio" and "Project works." Here, not just the student's right or wrong answer, but their thinking process, the logic of approaching the problem, and the dynamics of cognitive growth (periodic development) were analyzed step by step.

- **Modeling and experimental method:** To prove the effectiveness of modern Computerized Adaptive Testing (CAT) and gamification (gamified diagnostics) processes, virtual simulation situations were modeled in the educational environment. In this, the learner solved the given problem with the help of information technologies, and their level of interest (intrinsic motivation) in this process was recorded.

3. Discussion The theoretical and practical analysis of the research results shows that changing assessment mechanisms in the educational system is not just a technical process but a profound psychological and cognitive transformation. The obtained data confirmed a number of fundamental advantages of modern diagnostic methods over traditional exams, which can be explained through cognitive psychology and pedagogical laws as follows:

1. Cognitive load and thinking levels (from the perspective of Bloom's Taxonomy): During the discussions, it became clear that traditional closed tests and oral questions are mainly



aimed at the lowest levels of Bloom's taxonomy — remembering and understanding. Through these methods, the student's true competence cannot be determined. Modern methods, including situational analysis (case-study) and projects, activate the higher cognitive functions of an individual, such as direct working memory, critical thinking, and non-standard decision-making (synthesis and evaluation). That is, the diagnostic process becomes not only a measurement tool but a cognitive exercise that develops cognitive processes.

2. Reducing "Test anxiety" and the "Flow" state: Traditional summative assessment often triggers a strong emotional stress such as "fight or flight" in the learner, which leads to the blocking of attention and memory. The Computerized Adaptive Testing (CAT) and gamification (gamified diagnostics) methods analyzed in our research effectively solve this problem. Because the adaptive test adjusts to the student's ability, a knowledgeable student does not get bored with very easy questions, and a low-performing student does not get depressed by very difficult questions. According to the theory of the famous psychologist Mihaly Csikszentmihalyi, when a person's ability and the difficulty of the task given to them are proportional, the individual enters a state of "flow" and can manifest their highest potential without stress.

3. Transformation of motivation: These modern methods radically change the character of motivation in students. While in the traditional system "grade" or "punishment" is the main driving force (extrinsic motivation), in a formative assessment system like the Portfolio method, the student monitors their own personal growth. This forms the characteristics of self-analysis (reflection) and enjoying the process itself (intrinsic motivation). The student is not afraid of making mistakes because diagnostics serves not to punish the mistake but to show the way to correct it.

4. Psychological and technical barriers to implementation: Of course, the discussions also showed that this transition process has its own difficulties. To fully implement modern diagnostic methods into practice, it is first required to overcome psychological barriers in the educators themselves. The teacher must give up their authoritarian "grading controller" status and transition to the role of a supportive "facilitator and diagnostician" for the learner. Moreover, developing such assessment criteria (rubrics) requires high psychological acumen, digital literacy, and additional time from the teacher.

In conclusion, it can be noted that humanizing and objectifying the assessment system in educational institutions is not just a new pedagogical technology, but the main psychological guarantee of preserving the spiritual and mental health of the learner and raising true creative specialists.

4. Conclusion In general, diagnosing the knowledge, skills, and qualifications of pupils and students in the educational system is not only an integral part of the educational process but a profound socio-psychological phenomenon that affects the destiny of an individual. The conducted scientific-theoretical analyses clearly show that traditional (summative) assessment methods based solely on memorization and short-term memory cannot fully meet today's intellectual and practical demands. Instead of realizing the learner's real potential, they often cause "test anxiety," emotional stress, artificial competition, and a fading passion for learning.

As an alternative to this, modern methods such as computerized adaptive testing (CAT), portfolio, case-study, project works, and simulation technologies impartially reveal the true competencies of the learner. Through these methods, not only the individual's academic knowledge but also problem-solving, critical thinking, creativity, and self-management abilities in unexpected situations (soft skills) are objectively measured. Most importantly, these innovative tools transform the diagnostic process from a "punitive control" mechanism into a "formative environment" that develops and supports the student.



Based on the results of the research, to successfully integrate these modern psychological-pedagogical methods into educational practice, it is appropriate to take the following steps:

- **Changing the pedagogical approach:** Achieving the abandonment of the controlling "authoritarian examiner" role by teachers and adopting the role of a "facilitator" and "diagnostician" who analyzes the student's cognitive mistakes and guides them correctly;
- **Creating an information-psychological infrastructure:** Providing educational institutions with adaptive digital platforms that adjust to the student's personal psychological characteristics and learning speed;
- **Integration of psychological services:** Strengthening preventive work on monitoring the mental state of learners and managing stress during assessment processes, especially during final state exams and rating controls.

Ultimately, humanizing the assessment system and bringing it to a psychologically moderate state is the primary key to improving the quality of education. Well-rounded specialists who are not afraid of their mistakes, can make logical decisions in crisis situations, and have high intrinsic motivation for lifelong learning can only be raised in such a fair, impartial, and psychologically healthy diagnostic environment.

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