Research Article

THEORETICAL AND METHODOLOGICAL FOUNDATIONS OF MONITORING THE QUALITY OF EDUCATION

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ABSTRACT

The theoretical and methodological foundations of monitoring the quality of education reveal the management of the educational process, the system for implementing the monitoring of education quality in the general secondary education system, and the object of monitoring education quality. It also highlights the opportunities provided by monitoring the quality of education in managing school activities, the communication of the results of education quality monitoring to the pedagogical staff, and the effective implementation of advanced pedagogical and information-communication technologies in the educational process.

KEYWORDS

Education quality, education quality monitoring management system, strategy, methodology, and tactics, scientifically based information processing, storage, dissemination, standardized software, diagnostic systems, student's intellect, teacher's innovative activity, teaching quality level.

INTRODUCTION

The theoretical and methodological foundations of education quality monitoring represent a distinctive and independent form of managing the educational process, characterized by its conditional nature and the potential to provide benefits in conceptual relationships. The monitoring of education quality is directly related to the management tasks and stages within the educational process. Therefore, various aspects of it must be considered in close connection with the innovative management process of general secondary education institutions.

In the last decade, Western scholars such as Vincent Greaney, Thomas Kellaghan, Paulo Santiago, Deborah

Nusche, Thomas Radinger, and Claire Shewbridge have conducted research focused on the development of monitoring education quality, national assessment system technologies, and effective models, the comparison of educational systems, and the advancement of systems for evaluating education quality.
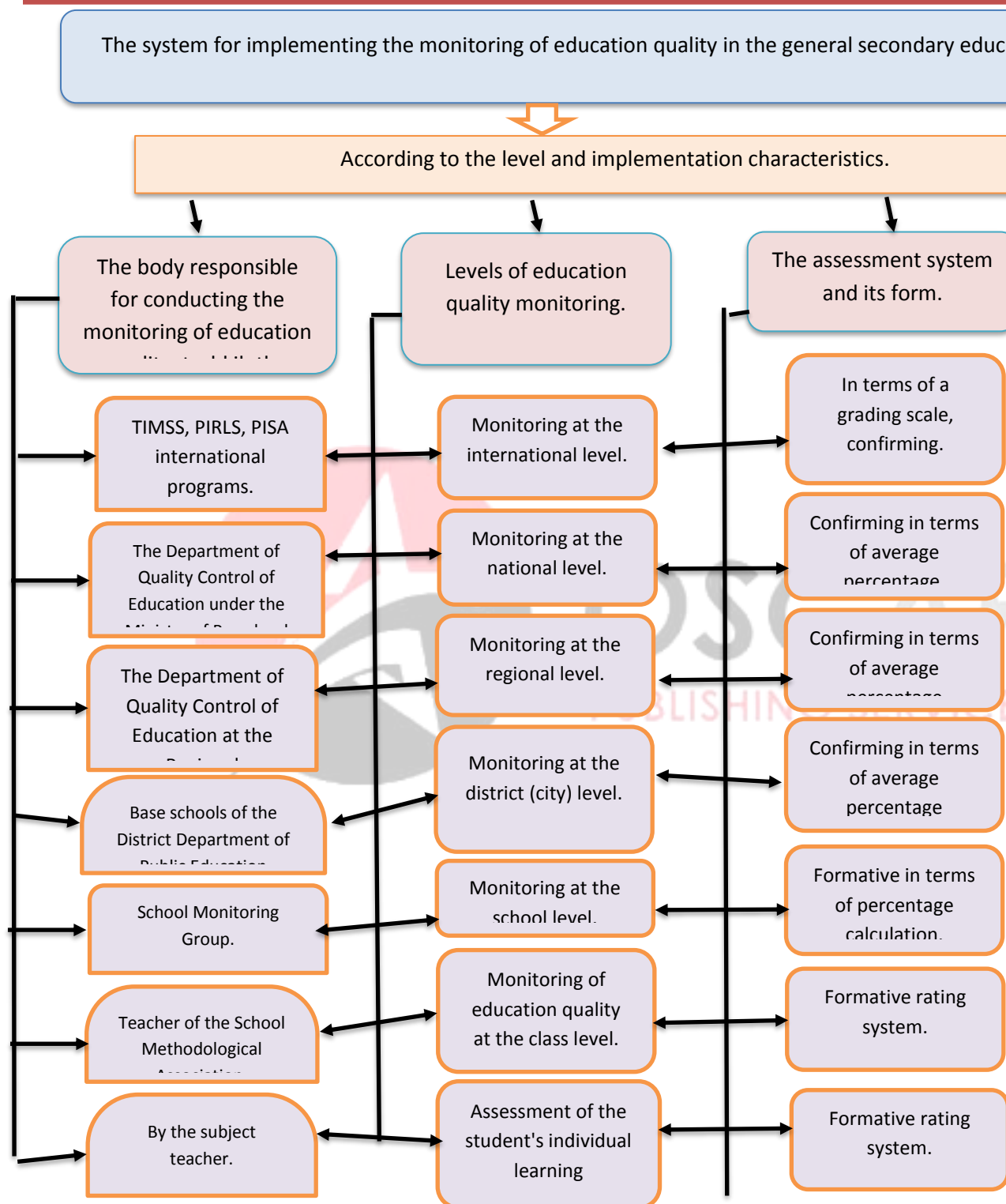
The term "monitoring" was first used as an alternative to "control" in the context of the United Nations' Stockholm Conference in June 1972. The elements of monitoring as a holistic system were defined and substantiated in the works of R. Main, V. D. Fedorov, and K. S. Burdin. Academic R. K. Djurayev defines monitoring as the collection, processing, storage, and dissemination of information for the purpose of providing education system management with the necessary data to make informed conclusions, assess its condition, and conduct analyses at any given time.

The management of education quality, as described in Sh. Kurbonov and E. Seithalilov's "Management of Education Quality" and R. Sh. Akhlidinov's "The Art of School Management," highlights that a comprehensive system of education management is effective under the following conditions:

• If it is applied at every level of the continuous education system and at every stage of the educational process;

• If all subjects involved in the educational and management processes possess the necessary qualifications and are interested in increasing the effectiveness of their activities and the quality of education;

• If it is aimed at assessing the level of student development;

• If the educational process is organized based on the requirements of the State Educational Standards (DTS), and plans and assignments are developed in accordance with these standards;

• If various methods and tools are used to monitor, control, and evaluate education quality;

• If the pedagogical skill and qualification of the student community, particularly the quality of teaching, are regularly improved using various methods, including the control of assessment based on the rating system, which evaluates the level of students' development, knowledge, skills, and competencies.

The system for implementing the monitoring of education quality in the general secondary education system is shown in Diagram 1.2-1.

The system for implementing the monitoring of education quality in the general secondary education system.

According to the level and implementation characteristics.

The body responsible for conducting the monitoring of education	Levels of education quality monitoring.	The assessment system and its form.
TIMSS, PIRLS, PISA international programs.	Monitoring at the international level.	In terms of a grading scale, confirming.
The Department of Quality Control of Education under the	Monitoring at the national level.	Confirming in terms of average percentage
The Department of Quality Control of Education at the	Monitoring at the regional level.	Confirming in terms of average percentage
Base schools of the District Department of Public Education	Monitoring at the district (city) level.	Confirming in terms of average percentage
School Monitoring Group.	Monitoring at the school level.	Formative in terms of percentage calculation.
Teacher of the School Methodological Association	Monitoring of education quality at the class level.	Formative rating system.
By the subject teacher.	Assessment of the student's individual learning	Formative rating system.

In the books "Management of Education Quality" by Sh. Kurbonov and E. Seithalilov, and "The Art of School Management" by R.Sh. Ahlidinov, it is stated that a comprehensive system for managing the educational system will be effective under the following conditions:

• If it is implemented at every level of the continuous education system and at every stage of education in real life;

• If all subjects involved in the educational and management processes possess the necessary qualifications and are interested in improving the effectiveness of their activities and the quality of education;

• If it is aimed at assessing the level of development of the student's personality;

• If the educational process is organized based on the requirements of state educational standards (DTS), and plans and assignments are developed in accordance with these standards;

• If various methods and tools are used to monitor, control, and assess the quality of education;

• If the pedagogical skills and qualifications of the teaching staff, especially in improving the quality of education, are regularly enhanced through different methods, including monitoring the level of development of students and assessing their knowledge, skills, and abilities based on a rating system.

In the field of pedagogy, several theories related to learning achievements and outcomes have been developed, as learning and its stages, as well as research on students' educational achievements, are integral parts of teaching quality. Notably, according to the theory of I.Ya. Lerner, the levels of mastery are defined as follows:

1. Level 1 – Familiar reproduction;

2. Level 2 – Application in familiar situations (according to a model);

3. Level 3 – Application in unfamiliar situations.

Famous pedagogue V.P. Bespalko classified the theory of mastery into the following levels:

1. Level 1 – Familiarity;

2. Level 2 – Reproduction;

3. Level 3 – Application;

4. Level 4 – Creativity.

In our opinion, in terms of assessing the quality of education, students' educational achievements and outcomes consist of the following levels:

1. Level 1: Knowledge – The ability to remember and explain the learned material;

2. Level 2: Skills – The ability to apply learned knowledge in familiar situations;

3. Level 3: Expertise – The ability to apply learned knowledge and developed skills in unfamiliar situations and analyze them;

4. Level 4: Competency – The ability to apply acquired knowledge, skills, and expertise in personal, professional, and social activities and generate new knowledge based on creativity, as well as the capacity to assess it.

Monitoring is a critical and independent link in the management cycle within the social management theory system. In monitoring the quality of education, the effectiveness of the pedagogical activities carried out is identified and evaluated. The most important aspect of this process is the establishment of feedback regarding the consistency of the final results of the pedagogical system with the set objectives.

The process of monitoring the quality of education generally consists of three logically interconnected stages:

1. Analysis Stage – At this stage, the results of observation and assessment are summarized, and analytical data on the current situation is prepared. Based on this, recommendations are developed to address identified gaps.

2. Forecasting Stage – In this stage, the gaps identified in students' knowledge, skills, and competencies, as well as factors affecting the quality of education, are addressed. During this process, various forms of activities are utilized, based on cooperative pedagogy and the "logframe" technology.

3. Correction Stage – This stage highlights the corrective (remedial and developmental) nature of education quality monitoring. When this process is carried out continuously, positive changes occur in the dynamics of education quality.

During the process of education quality monitoring, the fulfillment of the following societal demands is examined and analyzed:

• a) The quality of personnel training, requirements for selecting the content of education, the necessary level of student preparation, the qualification requirements for graduates of educational institutions, the required volume of the academic load, and the evaluation of the activities of educational institutions and the quality of personnel training.

• b) The level of knowledge, skills, competencies, and mastery of general secondary education subjects by students based on state education standards, and the identification of factors influencing these levels.

• c) The introduction of advanced modern teaching methods, innovative pedagogical and information technologies, and effective forms and methods of spiritual and moral education into the educational process.

• d) The instilling of the ideas of national independence, aimed at ensuring peace and stability, advancing national progress, and improving the well-being of the people, in students.

• e) The effective use of the new generation of educational and teaching-methodological complexes in educational institutions.

• f) The opportunities for effectively utilizing the material and technical base of educational institutions.

• g) The organization of regular training and retraining of pedagogical staff in a systematic manner.

• h) The practical implementation of regulatory frameworks that define the requirements for evaluating education and its final outcomes, as well as the quality control of the educational process.

• i) The development of students' independent thinking, active civic positions, initiative, ability to effectively use media resources and information-communication technologies in their activities,

conscious career choice, and the formation of general cultural skills.

The quality of education is ensured through the processes of assessment, control, and management, based on monitoring and evaluation.

Education quality monitoring is an objective benchmark in achieving goals and plans. It enables the analysis and comparison of the current situation. In the educational process, education quality monitoring mainly reflects psychological-pedagogical and functional results that form part of educational quality monitoring.

• Psychological-pedagogical results include knowledge, learning skills, behavioral norms, personal orientation, and one's abilities within the system of relationships.

• Functional results include various pedagogical influences associated with managing students' activities.

The monitoring of education quality consists of the following multifaceted activities:

- Assessing the final outcomes of the educational process;

- Measuring the student's level of development and the quality of teaching;

- Evaluating social activity, spiritual maturity, the effectiveness of moral upbringing, and the appropriateness of internal control;

- Creating favorable conditions for analyzing results, drawing conclusions, and implementing timely measures to improve management effectiveness.

Overall, applying education quality monitoring in the educational process and grounding it in a scientific-theoretical framework allows for the modernization of educational content, teaching methods, and technologies. This, in turn, improves the quality of education and ensures that students meet the requirements of the state education standard.

Norm (Standardization) is one of the most essential components of education quality monitoring, as results are compared against a set norm. The process of comparing actual outcomes with the standards and criteria of educational activities, followed by content-based evaluation and adjustment, is a critical part of the education quality monitoring process. Comparing set goals, standards, norms, and benchmarks with the actual results in education is called an inspection.

The object of education quality monitoring includes the implementation of decisions related to the education system, the fulfillment of educational institution work plans, the teaching process, the educational process, methodological activities, innovation processes, the provision of educational and upbringing activities, and the psychological environment within the educational institution.

The communication of education quality monitoring results to the pedagogical community occurs through pedagogical councils, production meetings, director's meetings, general parent meetings, methodological association meetings, bulletin boards, wall newspapers, and the education quality monitoring office.

The formalization of education quality monitoring results includes textbooks, methodological guides, recommendations, lesson plans, teachers' creative

reports, graphic analyses (diagrams) of knowledge, skills, and competencies, final participant rankings, surveys, written analyses, results of achievements and shortcomings, and problems identified.

The requirements and criteria for conducting monitoring include:

- - The accuracy and clarity of information, with the process relying on precise data. Information should be concise and convenient for processing and transmission;

- - Data should be comparable, showing not only the current state but also changes over time, allowing for comparison and assessment of results;

- - The information should clearly reflect internal, external, and system-level changes;

- - The data should help forecast the future of the system and visualize ways to achieve goals.

- In managing school activities, education quality monitoring creates the following opportunities:

- - Ensures the effectiveness of innovative approaches and views;

- - Implements effective methods in the internal management of the educational process;

- - Avoids ineffective methods and practices without a scientific-methodological foundation, as well as random testing in studying the activities of teachers and students;

- - Provides proper scientific-methodological guidance for the activities of teachers, school psychologists, and deputy directors;

- - Creates and regulates a normative framework for controlling student activities and studying parental and public opinion;

- - Develops a project, program, and guidelines for internal control within each school;

- - Improves the form, content, scope, and duration of developed programs through trial testing.

- In education, monitoring involves constant observation of the educational process, gathering, storing, processing, and disseminating information to influence its state, development, and progress. For instance, continuous observation of the impact of the educational process on the student's personality allows for data collection, analysis, and future forecasting of the situation.

- The monitoring process includes the following components and tasks:

- - Utilizing various assessment strategies for

evaluating the educational process, including formal and informal, diagnostic, and general approaches;

■ - Ensuring the scientific and practical effectiveness of internal monitoring of the teaching process by school leaders to determine the achievement and management of education quality;

■ - Defining the frequency, duration, and content of assessments, ensuring transparency in conducting assessments, and ensuring the objectivity of results;

■ - Preventing exemplary students from being overlooked during monitoring periods by the school administration and teachers and ensuring they are regularly encouraged.

Monitoring Model Students for Arrogance: Teachers should monitor exemplary students to ensure they don't become overly proud or arrogant when they are presented as role models.

Addressing Knowledge Gaps: To fill identified knowledge gaps among students, effective and impactful measures should be taken within the relevant subjects. The internal resources of the school should be skillfully utilized, and in necessary cases, rapid alternative decisions should be made to change the situation positively.

Analyzing the Educational Process: The educational process is analyzed using pre-developed systems or criterion indicators.

Ensuring Data Comparability: Ensuring that the collected data is comparable, reflecting not only the current state but also the ongoing changes, and that it can be assessed and compared based on the results.

Effective School Management: In managing school activities, education quality monitoring should demonstrate that new approaches and perspectives lead to better outcomes. Internal and external changes in the system should be clearly and smoothly displayed.

Predicting the Future of the System: The collected information should help predict the future of the system and help envision ways to achieve goals, ensuring the effectiveness of new approaches and perspectives.

Overall, monitoring in education is a pedagogical category that simultaneously helps regulate management. Based on data analysis, it influences the effective organization of management within the educational system while maintaining healthy psychological balance.

Factors Directly Affecting Education Quality:

Psychological Factors: Overly strict standards and norms can cause anxiety, insecurity, and other negative outcomes among participants in the educational process. Conversely, lowering standards can reduce engagement, leading to indifference and laziness among students.

Objective Assessment Using International Programs: By using international assessment programs and state education standards (DTS), the knowledge of students and, through them, the performance of teachers can be accurately monitored and objectively assessed.

Teacher-Related Factors:

Level of Preparedness for Lessons: Teachers' readiness for their lessons.

Continuous Self-Improvement: Teachers' efforts to continuously improve themselves and enhance their qualifications.

Skill in Identifying and Addressing Knowledge Gaps: Teachers' ability to identify and address gaps in students' knowledge.

Awareness of Students' Psychological Traits: Teachers' knowledge of the psychological characteristics of their students and their ability to approach them from a pedagogical-psychological perspective.

Use of Modern Pedagogical and Information Technologies: Teachers' skills in utilizing modern pedagogical technologies and best practices.

Student-Related Factors:

Psychological Readiness: The psychological readiness of students (including their health, domestic habits, and adaptability to their environment).

Access to and Use of Textbooks: The availability of textbooks and the ability of students to use them effectively.

Preparation for Lessons: The level of student preparation for lessons.

Ability to Master the Curriculum: Students' ability to grasp the curriculum.

Participation in Extracurricular Activities: Students' involvement in various clubs and extracurricular activities.

Ability to Work Independently: Students' capacity for independent study.

The quality of education has two key aspects, and these aspects are considered indicators that ensure the quality of education:

• Compliance with state educational standards;

• Meeting the demands of consumers (students and their families).

The process of ensuring modern education quality is seen as an effort to align the professional activities of both teachers and students with the demands of the subject area, utilizing information and communication technologies (ICT) extensively.

The quality of education is largely dependent on the scientific-methodological potential, pedagogical image, and professional competence of teachers. The ability of teachers to effectively deliver the subject matter to students is a major force in ensuring education quality.

One of the factors influencing the monitoring of education quality mentioned above is the effective implementation of advanced pedagogical and information-communication technologies in the educational process. The effectiveness of these technologies can be determined based on the following criteria:

• Effectiveness: The consistency and high level of efficiency in the educational process.

• Relevance: The social significance and successful fulfillment of educational and upbringing tasks.

• Stability: Achieving high results multiple times and testing in different conditions.

• Optimality: The ability to achieve high results with minimal time, resources, and conditions.

• Widespread Applicability: The possibility of creatively applying the experience in practice on a large scale.

• Corrective Nature of Monitoring: When identified problems and shortcomings are promptly addressed, the quality of education improves.

The effectiveness of education quality monitoring results is achieved through the systematic implementation of pedagogical innovations into the educational process.

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