MONITORING OF GENERAL SECONDARY EDUCATION QUALITY:
DIAGNOSTIC AND COMPETENCY SCIENTIFIC POSITION

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У статті проведено з'ясування наукових основ моніторингу якості освіти на засадах діагностично-компетентнісного розуміння можливостей системного дослідження цього процесу в закладах загальної середньої освіти.

Аналіз джерел та публікацій уможливив виявлення значення проблеми моніторингу якості освіти для теорії управління закладами загальної середньої і вищої освіти, розгляді цієї категорії як політичної, управлінської, педагогічної. З’ясування провідних характеристик якості освіти (багатогранності, багаторівневості кінцевих результатів, поліхронності, багатосуб’єктивності, невизначеності в оцінках, інваріантності та варіативності) у працях українських і зарубіжних авторів зумовило визначення мети: визначення в розвідці наукових основ моніторингу якості загальної середньої освіти на засадах діагностично-компетентнісного розуміння можливостей системного дослідження цього процесу в закладах загальної середньої школи. Охарактеризовано функції моніторингу якості освіти: активізувальну, інформаційну, корекційну, формувальну, діагностувальну та аналітичну, моделювальну й управлінську, прогностичну; обрано алгоритм їх реалізації, запропонований Т. Лукіною і А. Бєлкіним. Визначено діагностично-компетентнісні специфіку методів контролю в системі моніторингу якості загальної середньої освіти. Одним із засобів управління та елементів системи виокремлено моніторинг якості освіти: активізувальну, інформаційну, корекційну, формувальну, діагностувальну та аналітичну, моделювальну й управлінську, прогностичну; обрано алгоритм їх реалізації, запропонований Т. Лукіною і А. Бєлкіним. Визначено діагностично-компетентнісну специфіку методів контролю в системі моніторингу якості загальної середньої освіти. Одним із засобів управління та елементів системи виокремлено моніторинг якості освіти: активізувальну, інформаційну, корекційну, формувальну, діагностувальну та аналітичну, моделювальну й управлінську, прогностичну; обрано алгоритм їх реалізації, запропонований Т. Лукіною і А. Бєлкіним. Визначено діагностично-компетентнісну специфіку методів контролю в системі моніторингу якості загальної середньої освіти. Одним із засобів управління та елементів системи виокремлено моніторинг якості освіти: активізувальну, інформаційну, корекційну, формувальну, діагностувальну та аналітичну, моделювальну й управлінську, прогностичну; обрано алгоритм їх реалізації, запропонований Т. Лукіною і А. Бєлкіним.

Problem statement. Modern socio-economic and political changes have become a prerequisite for the national education system reforming. The conception of implementing the state policy in the field of general secondary education reforming «New Ukrainian School» for the period up to 2029, approved by the Cabinet of Ministers of Ukraine dated December 14,
2016 № 988, the new Law of Ukraine «On Education» defines the strategic directions and emphasizes the need to improve the education quality, updating its content and forms of organization of the educational process. The implementation of monitoring research into the educational system as an information base in the system of education quality management is among the ways to solve this problem. Monitoring is considered as an effective means of selection, processing, storage of information about the pedagogical system activities in a particular direction, which allows to monitor its condition for a long time, to correct the educational process and predict the development of the educational system. This is important in the conditions of the modernization of national education, because it allows to eliminate the possible miscalculations and develop a strategy for further development of education in time. The quality of national education and educational monitoring studies, which are considered comprehensively, are an important condition for ensuring a high level of quality of educational services in today’s conditions.

**Analysis of sources and publications.** The application of monitoring of the quality of education and academic achievements of pupils and students in domestic pedagogy is actively studied by N. Baidatska, I. Bulakh, L. Kaidalova, O. Lokshyna and others. In the theory and practice of education there are different approaches to such monitoring; some scientists consider monitoring as a means of improving the system of information management of education (P. Anisimov, A. Kovalov, A. Maiorov, etc.), others consider it as a method of improving the strategic planning of secondary and higher professional education (A. Halahan, A. Saveliev, L. Semushyna), emphasize that the creation and full implementation of the educational process management system on the basis of monitoring provides an opportunity to influence the quality of education effectively.

The problem of monitoring was widely covered in the theory of secondary schools management. In numerous scientific researches which are connected with processes of pedagogical management and development of mechanisms of quality of modern education maintenance, O. Bainazarova, M. Bershtadskyi, V. Bezpalko, T. Volobueva, L. Hrinevych, G. Yelnykova, M. Zahirnyak, A. Dakhin, O. Lokshyna, T. Lukina, V. Luniachek, O. Liashenko, P. Matviienko, O. Ovcharuk, O. Ostroverkh, O. i, N. Talyzova, A. Solohub, M. Potashnyk and others emphasize on reforming the educational system through the use of monitoring technologies. Instead, in modern pedagogical science, approaches to identify the quality of education criteria, to monitor the mechanisms and processes of its use are developed insufficiently. The formation of an educational monitoring system requires the development of both theoretical and methodological principles, on the basis of which a monitoring model, appropriate means and technologies are created. The general methodical bases of designing of educational systems monitoring are connected with the system approach to education, modern management theories, the activity approach to teaching.

The quality of education is considered by Ukrainian scientists T. Lukina, O. Liashenko, A. Maiorov: as a political category that accumulates the principles of educational policy of the state at a certain stage of its development and the main strategic lines of the national education system in the context of world trends; as a social category that reflects the social ideals of education and outlines the general goals of education, legally defined and normatively established in state standards; as a category of management that determines the strategies of influence to the certain indicators of the educational system functioning and chooses the possible ways to change its development; as a pedagogical category, which is the quintessence of: 1) the essence of the concept; 2) diagnostic procedures; 3) analysis of the phenomena and properties of the subjects of the educational process. In this sense, it must meet the personal and social goals of education, the political strategy of its development in the context of domestic and global trends, the principles of education management at the different levels of administration (Lukina, 2007; Liashenko, 2004; Maiorov, 2005).
The main characteristics of the quality of education are: *versatility* (the quality of the final result of education and the quality of the potential of educational systems that ensure the achievement of this quality; the quality of upbringing and teaching results; creative and reproductive, knowledge and activity component of learning and mannerliness); *multilevelness of final results of quality* (quality of graduates of higher, vocational, general and preschool educational institutions, out-of-school education); *polychrony* (a combination of current, tactical and strategic aspects of the quality of education, which at different times are assessed differently by the same subjects); *multi-subjectivity of the quality of education*: the assessment of such quality is made by many entities, including pupils and students, graduates of educational institutions, higher educational institutions, parents of pupils and students, employers, society in general and government bodies, etc.; *multicriteria* (the quality of education can be assessed using an appropriate set of criteria); *uncertainty in the assessment of the quality of education* and educational systems due to the higher level of subjectivity in the assessment of the quality of education by various experts; *invariance and variability*: among the many qualities of educational systems and educational institutions of their graduates are invariant, common qualities for all graduates of each level of education and specific to the selected category of graduates or certain educational systems (Lukina, 2007). Thus, depending on the content that is put in the concept of «quality of education», its essence is considered as: the results of learning and the educational process; efficiency of the education system of a certain level; the desired ideal of person education; priority of the state educational policy (Zahvozdyn, 2001).

Spectrally, the quality of education is considered as a broad (integrated) concept, which includes: the quality of the educational process and the conditions in which it is conducted; quality of technologies; quality of financial conditions; the quality of the conceptual course of management, ie everything that affects the quality of educational institution products (Zymniaia, 2004). Basing on these conclusions, scientists claim that *the quality of education* is its accordance with the purpose and needs of the educational system, modern social norms, educational standards, leading processes and results, which contains a list of requirements to the personality, educational environment, educational system that implements them on the certain stages of person teaching, which corresponds to a certain set of indicators. The quality of education is explained not only with the amount of knowledge, but also with the parameters of personal, ideological, civil development, while the problem of the quality of the educational process is considered from the standpoint of universal and social value of the educational system.

The purpose of this article is to clarify the scientific basis for monitoring the quality of general secondary education on the basis of diagnostic and competence understanding of the possibilities of systematic research of this process in general secondary schools.

**Presentation of the main material.** Today in Ukraine the main educational trends and patterns include: the creation of a common European educational space; development of personal and activity paradigm of educational process; the aspiration to unify and standardize the modern educational approaches; creating conditions for lifelong learning; continuous growth of qualitative indicators of development and functioning of educational institutions. New trends in value priorities change determine the social development, the transition of humanity from an industrial society with a pronounced technocratism of thinking to post-industrial informational, which involves a reassessment of the intelligence and quality of each person education.

Education has long been considered a social institution that meets the needs of society to prepare new generations for life, and to prepare the subjects of social action to solve economic, social, cultural problems facing humanity, because it is education that “forms a person, equips him or her with knowledge, educates civic qualities, the ability to think and work, to communicate and relax, to live in a social way and at the same time to be an individually unique person” (Andrushchenko, 2001, p. 11). According to E. Toffler, in the conditions of transition from the established adaptive educational paradigm which is inherent for industrial and post-industrial society, to the innovative model with its inherent factors of transience, novelty and diversity, the main priority was the formation of human ability to adapt to changing conditions
quickly and rationally, which presupposes the presence of such personal traits as the ability to learn, the ability to communicate and the ability to choose (Toffler, 2002, p. 449).

Accordingly, the creation and implementation of quality management systems for education in domestic educational institutions is in line with international standards, in which the quality monitoring is one of the management means and elements of the system, which is recommended to understand as «tracking, supervision, observation; measurement or testing at specified intervals with the purpose to regulate and manage processes».

Due to the variety of tasks and broad monitoring capabilities, the functions that should be performed by quality monitoring as a technology for research in the field of education are determined (Amelina, 2014):

– informational, which is the accumulation of information data banks about the results, which provides a potential opportunity to conduct the analytical and forecasting activities and the development of educational policy at different levels of the educational system management;

– formative and corrective, the essence of which is that the information obtained during the research should be used to identify the causes that affect the quality of education, to fix the numerous unexpected results of the educational process and to form the corrective activity programs;

– activating, which is the monitoring studies conducting involving different groups of participants of the educational process (pupils, their parents, teachers, heads of educational institutions, representatives of state education administration bodies, methodological services, politicians, the public), which not only opens opportunities for broad discussion of educational issues, but also promotes the growth of public consciousness and social activity, as well as pedagogical culture improving;

– modeling and prognostic, which mean the next stage of analytical processing of information obtained during the monitoring research, when modeling involves the construction of a number of models of the researched situation development, and prognostic is related to assessing of the magnitude of mutual influence of internal factors, the action of certain socio-political processes or the results of the educational system functioning to the social and economic development;

– analytical and diagnostic, which are closely related, but separated chronologically: analytical is manifested in a comprehensive consideration of the state of the education system or a particular educational problem in order to determine the factors of influence, assess their importance and significance for further development of the education system, and diagnostic is directly aimed at clarifying the causes of the current situation in order to further develop the alternatives or recommendations for eliminating the identified shortcomings and solving problems;

– managerial, which involves the final use of generalized monitoring information by the management system to develop and make appropriate decisions at all levels, aimed at eliminating the undesirable consequences of the education system reforming, improving the quality of its functioning.

Theoretical analysis of scientific works on the research problem showed that the main tasks of monitoring the quality of professional training are:

– systematization of information about the state and development of the educational process;

– development of a set of indicators that provide a holistic view of the state of the process, the qualitative and quantitative changes in it;

– providing a constant and clear presentation of information about the processes taking place in the context of the formation of the chosen level of education;

– information support of analysis and forecasting of the state and development of the educational process, development of appropriate management decisions (Boichuk, 2014).
All monitoring functions are subordinated to the general goal, which is to increase the efficiency and quality of the studied system.

Monitoring measurements are usually considered as an independent area of research; according to T. Lukina it is “the process of reflection of certain achievements or qualities of the personality in the numerical value”, they are interpreted «as a practical educational activity aimed at obtaining objective assessments of the level of current and final readiness of the students» (Lukina, 2007, p.13 ), and the main purpose of pedagogical measurements is to obtain numerical equivalents of the manifestation of the feature of interest to the researcher or teacher. Monitoring pedagogical activity is conducted on the basis of the algorithm proposed by A. Belkin:

– the first step: frontal study of the educational process with the definition of specific diagnostic tasks; primary, purposeful, systematic accumulation of information about the activities and interaction of participants of the training process;
– the second step: classification of the received data for the purpose of preparation for the diagnostic tasks solving; determination of the diagnostic level of information;
– the third step: taking into account and evaluation of the external peculiarities of the educational process; analysis of factors that determine external manifestations, determination of their stability, periodicity;
– the fourth step: interpretation of the obtained information and formation of a hypothesis about the possible connection of external manifestations with the internal content of the educational process; checking the completeness and accuracy of the received information, adjusting the previous conclusions;
– the fifth step: coding (encryption) of the information, which ensures its use for diagnostic purposes;
– the sixth step: forecasting further trends in the process development, taking into account the real opportunities to support the positive, as well as overcoming the negative factors;
– the seventh step: verification (validation) of the diagnosis and prognosis;
– the eighth step: perspective and current planning of pedagogical activity on realization of diagnostic data in quality monitoring on each subject (Belkin, 2005).

Ukrainian pedagogical science and practice uses different scientific approaches in education: systemic, structural, activity orientated, complex, subject-subject, individual, differentiated, personal and others, but recently there has been a shift of emphasis from the concepts of “education”, “mannerliness”, “general culture” on the concept of “competence” and “competency”, as a consequence the attention focuses on the quality of education and the creation of effective mechanisms for its monitoring. Diagnosis (translated from Greek as “ability to recognize”) is considered as the process of making a “diagnosis”, i.e. establishing the level of development of the subject of diagnosis. Control (verification) is used to establish feedback on monitoring procedures. As a pedagogical concept, “control” is a conscious, systematic observation and recording of verbal and practical actions of pupils in order to determine the level of knowledge and experience, mastery of educational material, possession of theoretical and practical knowledge, skills and abilities and the formation of certain personality traits. Thus, in modern didactics, control or verification of training results is interpreted as pedagogical diagnostics, and the system of such control as its quality monitoring.

I. Zymnia in a similar situation emphasizes that with the competence approach implementation a new vision of the content of education, methods and technologies for determining its quality is formed. This will help to preserve cultural and historical, ethno-social values, if we consider the competencies on which the content is as complex personal formations that combine intellectual, emotional and moral components (Zymniaia, 2004). Ukrainian scientists O. Pometun and Y. Tryus are convinced that the competence approach in education is closely related to personal and activity approaches, because it is personality-oriented and can be implemented and tested only in the process of performing a certain set of actions by a pupil (student) (Pometun, 2004). This approach requires the transformation of the content of
education, its transformation from a model that exists objectively for «everyone», to the subjective assets of each person, which can be measured.

In the structure of diagnostic research there are levels of pedagogical diagnostics: component diagnostics (has low practical value because it is based on intuition and experience, and the descriptive nature of pedagogical modeling in component diagnostics allows to establish single manifestations and indicators of individual peculiarities of personality and single characteristics of pedagogical influence; structural diagnostics (allows to clarify the state of single components of the pedagogical process to establish links between them, allows the formulation of hypotheses that reveal different degrees of dependence between single components or characteristics); systemic diagnostics allows to determine the functions of single aspects of the educational process as a holistic systemic phenomenon, as well as the potential for the development of this process; establishes a complete picture of the relationships between the single components and the task of identifying the relationships of different pedagogical subsystems. Such diagnostics allows to identify the parameters of competence development and prospects for monitoring the quality of the educational process of professional training) (Brychok, 2015). One of the ways to solve this problem is to update the requirements for education, shift attention from the learning process to its results, focus the content and organization of training to find effective mechanisms for determining the quality of education. The resultant effect of this scientific position is aimed not only at obtaining the amount of knowledge, skills and abilities, but also at the ability, readiness, ability of a person to effective and productive activities, when the main purpose of training is not banal accumulation of knowledge, but gaining the multi-vector practical experience, mastery the diverse technologies and the formation of value life orientations.

There are a number of classifications of types of pedagogical control: depending on the subject of activity: external control, mutual control and self-control; from the point of view of place and value: previous, current, boundary (divided into thematic and periodic, final); organizationally distinguish: individual, pair, group, frontal and combined control; by form of conducting the control can be oral, written, test, programmable (computer testing) (Test control and rating in education, 2006).

In the process of monitoring the quality of education, pedagogical control consists of: checking, which is identifying the level of knowledge, skills and abilities (formation of competencies); assessments, which is measuring and conditional reflecting of the level of knowledge, skills and abilities; accounting, which is results recording in the form of marks. Assessment is considered to be the formation of assessment of academic achievement, which integrates and presents in a certain scale (scales) data obtained during testing, portfolio use, exams, practical work, rating their results etc.

Conclusions. Thus, the diagnosis of indicators in the diagnostic-competence approach is conducted by means of pedagogical control, which provides: verification (identification of the level of formation of the components of competence); evaluation (measurement and conditional display of this level in the form of quantitative or qualitative evaluation); accounting (recording results in the form of summary tables). In general, the process of formation of the assessment of the education quality is reflected in a certain scale (scales), which systematically takes into account the data obtained during the current assessment, testing, control works and practical tasks, exams, rankings etc.

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MONITORING OF GENERAL SECONDARY EDUCATION QUALITY:
DIAGNOSTIC AND COMPETENCY SCIENTIFIC POSITION

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The article clarifies the scientific basis of monitoring the quality of education on the
basis of diagnostic and competence understanding of the possibilities of systematic research
of this process in general secondary education institutions. The analysis of sources and
publications made it possible to identify the importance of the problem of monitoring the
quality of education for the theory of management of general secondary and higher
education, considering this category as political, managerial, pedagogical. Clarification of
the leading characteristics of the quality of education (multifaceted, multilevel end results,
polychronicity, multi-subjectivity, multi-criteria, uncertainty in assessments, invariance and
variability) in the works of Ukrainian and foreign authors led to the goal - outlining in
research the scientific basis of quality monitoring on the basis of diagnostic-competence
understanding of the possibilities of systematic research of this process in the institutions of
general secondary school. The functions of monitoring the quality of education are characterized: activating, informational, corrective, formative, diagnostic and analytical, modeling and management, prognostic; the algorithm of their realization offered by T. Lukina and A. Belkin is chosen. The diagnostic and competence specifics of control methods in the system of quality monitoring of general secondary education are determined. One of the management tools and elements of the system is defined as quality monitoring, which is recommended to be understood as “supervision, tracking, observation; testing or measurement at specified time intervals to control and regulate processes ”has the status of a study rather than an empirical collection of material, and is complex, systemic in nature. The conclusion on specificity of quality control of education which provides: check - revealing of a condition of formation of components of competence is carried out; assessment - measurement and conditional reflection of this condition in the form of a level of quantitative or qualitative assessment; accounting - recording results in the form of summary tables. It is recommended to reflect the process of education quality assessment in a certain scale, which systematically takes into account the data obtained during the current assessment, testing, performance of tests and practical tasks, exams, ranking, etc.

**Keywords:** secondary education institution, quality of education, quality monitoring of general secondary education, competence, diagnostic approach, pedagogical diagnostics.