

ЗАГАЛЬНА ПЕДАГОГІКА ТА ІСТОРІЯ ПЕДАГОГІКИ

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MODERN NATURAL EDUCATION OF SENIOR SCHOOL STUDENTS IN THE SYSTEM OF REFORMING THE EDUCATIONAL SPACE ON THE BASIS OF ANALYSIS OF THE STATE STANDARD OF BASE AND COMPLETE

Modern trends in human development, the dynamics and systemic nature of social change due to globalization and the development of the information society, make new demands on the modern personality. At present, Ukrainian society needs competent individuals who strive for maximum self-realization, are open to new experiences, and are able to make conscious and responsible choices in various life situations. The transition to competency education involves updating the content of school education, which provides students with mastery of methods of independent acquisition of knowledge, skills and abilities and their creative use in practice to solve life problems.

Fundamental natural education is one of the main factors in the development of personality and needs to be updated in accordance with modern society's demands. Reorientation of natural education to the development of the individual's ability to independently analyze and solve problems that will help in the future to successfully implement the acquired natural competencies in life practice, causes the problem of forming scientific competence of schoolchildren and high school students.

In Ukraine, the problem of developing the scientific competence of high school students is at the initial stage of its scientific understanding, although in the pedagogical discourse some of its aspects are reflected in publications. For example, approaches to reforming natural education from the standpoint of the competence approach have been studied by domestic and foreign scientists, in particular O. Lyashenko, M. Golovko, G. Lutsenko, N. Bibik, O. Savchenko, O. Lokshina, O. Ovcharuk, G. Biletska, J.F. Osbon, S. Collins, M. Ratcliffe and others.

Reforming natural education in Ukraine on the basis of a competency-based approach can be fully addressed only if a set of measures is implemented that include updating state standards, curricula, textbooks and teaching practices. The study of the current state of natural education in Ukraine will create a basis for determining further areas of its improvement and development of scientific competence of students.

Today, the field of science «Science» includes subjects such as physics, astronomy, chemistry, biology, geography and ecology, which cover a wide range of issues about various properties, objects and phenomena of nature. In order to reform the education sector, the State Standard for Basic and Complete General Secondary Education in 2011 defines three main approaches to the modern learning process: competence, personality-oriented and activity-based. The Standard states that a person-centered approach to learning ensures the development of academic, socio-cultural, socio-psychological and other abilities of students. Competence approach contributes to the formation of key and subject competencies. The activity approach is aimed at the development of skills and abilities of the student, the application of acquired knowledge in practical situations, the search for ways to integrate into the socio-cultural and natural environment. Thus, the transformation of the content of natural education in high school involves the subordination of all its components to this main task, focusing on a qualitatively new process and learning outcomes.

In particular, the purpose of the educational field «Science» involves the formation of students' key natural science competence and relevant subject competencies as a mandatory component of the general culture of the individual and the development of his creative potential.

On the basis of the analysis of the State standard of basic and full general secondary education it is possible to allocate the following tasks facing natural education of senior pupils:

- ensuring that students master the terminological apparatus of natural sciences, mastering subject knowledge and awareness of the essence of basic laws and patterns that allow to understand the course of natural phenomena and processes, students' awareness of fundamental ideas and principles;

- formation of the student's natural-scientific picture of the world; development of his mental abilities, emotional and volitional sphere, education of socially active personality; development of cognitive activity and independence;

- expanding students' awareness of the need to combine intellectual and emotional perception of nature with practical environmental activities; development of experience of practical and experimental activity, ability to apply knowledge in the process of cognition of the world [2].

The content of the general natural component in the State Standard of Basic and Complete General Secondary Education in 2011 is significantly expanded compared to the previous standard: the content lines are defined, the requirements are formulated. Trends in the development of the educational field «Science», implemented by the State standard of basic and complete general secondary education, revealed the following positive practices: the formation of scientific competence of the student by mastering the system of knowledge about nature, ways of educational and cognitive activities, development of value orientations in various spheres of life and environmental practice; expansion of the purpose of the educational branch «Natural Science», which provides for the formation of key scientific

competence in the process of studying the subjects of the natural cycle; expansion of the list of general semantic lines of the educational branch «Natural Science», in particular, 2 lines were added: «ecological bases of attitude to nature management» and «ecological ethics»; ensuring the continuity of the content of primary and secondary school; the possibility of self-realization of the student in the process of mastering the practical component of the educational field [1].

Thus, the analysis of the State Standard of Basic and Complete General Secondary Education, approved by the Cabinet of Ministers Resolution № 1392 of November 23, 2011, showed that its requirements meet modern world trends in education, provide not only the formation of students' holistic understanding of nature, but also contribute to the formation of natural science competence of school graduates. However, the new version of the State Standard does not have a clear definition of the concepts of «scientific competence» and «subject competence», doesn't define the structure of scientific competence and its relationship with basic competences in science, mastering which contributes to the formation of a holistic scientific picture. In addition, the goals and state requirements for the level of general education of students are formulated too generalized and regardless of the specific class in which students study; objects and phenomena of nature are not specified, which causes arbitrary interpretation of the content in the curriculum, the function of which is the distribution of the content of educational material by classes, sections, topics.

The results obtained in the process of exploration of the outlined issues allow to identify many issues that need further solution: theoretical justification of the structure and content of subject competencies and competencies in natural sciences (physics, astronomy, chemistry, biology, geography and ecology), their definition and functional load; research of the contribution of certain school natural subjects to the development of natural science competence and

determination of its component composition depending on the profile of study; separation of methodological bases of the basis of the organization of training of natural subjects directed on development of natural-scientific competence of the pupil of high school; development of variable methods of teaching high school students, which would ensure the implementation of various models and organizational forms of specialized education in accordance with the modernization changes in the structure and content of general secondary education; research of the optimal balance between general and vocational subjects of profile education; determination of criteria and principles of selection of the content of formation of natural science competence, and ways of their realization in educational and methodical maintenance and a teaching technique as a whole and in the course of studying of separate natural subjects; creation of educational and methodical complexes on formation and development of natural-scientific competence of senior pupils and corresponding subject competences.

References:

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