

FUTURE BACHELOR OF NATURAL SCIENCES AS A SUBJECT OF INNOVATIVE PEDAGOGICAL ACTIVITIES

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Abstract: *The new demands for the teacher's personality determine the innovative vector of professional and pedagogical training of the future specialist. In addition, the determination of the role and place of the modern teacher in the New Ukrainian School led to the rejection of traditional approaches to the consideration of pedagogical activity and the system of professional training of the future teacher. In this regard, the competency-based approach in the professional and pedagogical preparation of the future bachelor, which ensures the processes of integration into the European educational space, becomes dominant.*

The new philosophy of education involves the formation of a complex of competences in the Natural Sciences as an important segment of permanent education. In view of this, there is a need to train the future bachelor of Natural Science as a subject of innovative pedagogical activity.

Problem setting. Modern European approaches to school Natural Science education involves the introduction of competency-based and personally-oriented training, the ultimate goal of which is to provide students with the skills necessary for a modern person to be successful in their professional and social activity, personal life. Therefore, the entry of the Ukrainian system of primary

and general secondary education into the European educational space requires the training of future Natural Science teachers who would teach the next generations for a new, more democratic society based on the formation of high-quality skills and competences for innovative activities.

The modern vectors of development of school and vocational education defined in the strategic directions of the European Union „Education and Training 2020” provide for the introduction of innovations, which are a form of updating it at all levels. Granting this, pedagogical activity in modern society is acquiring a competency-based, integrated and innovative character. It is the innovative orientation of teaching the school Natural Science course that corresponds to the strategic direction of education development in the context of the provisions of the New Ukrainian School Concept.

Analysis of recent research and publications. The timeliness of addressing the problem of formation of future Natural Science teachers is determined by the legislative and regulatory framework of the state educational policy (the law „On General Secondary Education”, „On Higher Education”; the National Program for the Development of Education in Ukraine in the 21st Century, New Ukrainian School Concept). In addition, an analytical review of scientific sources suggests that the problem of the competency-based approach to education is the focus of scientific attention of both domestic and foreign scientists (N. Bibik, Alan Bers, L. Vaschenko, Wolfgang Betther, Anatol Gremalsky, Irina Zimnya, Olena Lokshina, Neil O’Sullivan, O. Ovcharuk and others). Scientists have evaluated the undoubted benefits of the competency-based education paradigm. In particular, with regard to competency-based pedagogy, the scientific community is unanimous that one of the ways to update the content of education and matching it with contemporary needs is to direct the educational process to the acquisition of key competences and to find effective mechanisms for their implementation.

In view of the intensification of the processes of reforming the general secondary education, the problem of training the future bachelor of Natural Science to innovative pedagogical activity becomes extremely important. Modern science education as a guarantee of sustainable development of society is a powerful factor in the formation of the innovative worldview of the individual. Given this, various aspects of vocational training of future teachers in the Natural field of education were studied by M. Grinyova, N. Gritsay, N. Kalinichenko, V. Onipko, O. Yaroshenko and others. Researchers of pedagogical innovation problems (L. Danylenko, I. Dychkivska, O. Ogienko, V. Kremen, G. Sirotenko) are trying to correlate the concept of new with such characteristics as modern, original, progressive and competitive. For example, O.I. Ogienko defines the innovative activity of a teacher as the highest level of pedagogical creativity, the result of which is the restructuring of social and pedagogical relations [3, p. 34].

Despite the considerable achievements of national scientists on the problem of the essence of innovative pedagogical activity, it should be noted that the phenomenon of subjectivity of future bachelors of Natural Sciences in the context of the new paradigm of education has not yet been fully covered in pedagogical science. This led to the choice of the **topic of the article**, the purpose of which is to cover some aspects of innovative pedagogical activity of future bachelors of Natural Sciences in the context of the New Ukrainian School. In order to study the problem and solve the tasks, the following **research methods** were used: analysis of scientific approaches to understanding the nature of the pedagogical categories of „subject”, „innovative pedagogical activity”, as well as synthesis, classification, abstraction to achieve a comprehensive understanding of the problem research.

Presentation of the main research material. Given the challenges of today, Natural Science competency, as a compulsory component of general secondary education, is one of the determining factors in ensuring the idea of sustainable development of society. Understanding that the New Ukrainian School is an innovative educational environment aimed at the formation of competencies of the 21st century significantly actualizes the problem of abandoning outdated and therefore unproductive teaching methods. In the context of the above, the content of the professional training of future bachelors of Natural Sciences requires reinterpretation, as well as defining their role as subjects of innovative pedagogical activity. Such key guidelines of the New Ukrainian School Concept as personality-centered learning, competency-based and activity-based approaches only strengthen the inquiry for the subjective character of Natural knowledge. In addition, the problem of subjectivity has become relevant in connection with the development of ideas about the active role of humans in the process of life.

Thus, modern scholars (V. Ushmarova, O. Kadaner) define subjectivity as a characteristic of a personality, which expresses the personal meaning of its activity and determines the level of activity and responsibility [12].

It should be emphasized that the modern teacher of Natural Sciences is the holder of practical and theoretical activity with the help of which he is involved in the process of direct transformation and cognition of the surrounding reality. In the context of our study we are much in favour of O. Srabov's opinion that the subjectivity of activity as a system-forming property of the teacher is manifested in the awareness of the surrounding reality as an object of pedagogical research, to understand the educational paradigm as a condition for creative realization of one's personality through the system of professional and personal reflection [11]. Thus, the ability to reflect, the continuous movement to professional and personal self-improvement is the highest embodiment of the nature of the subjectivity of the future teacher.

Taking into account the current social and pedagogical requirements, the strategy of the updated pedagogical education consists in the self-development of the future specialist, who is able to act responsibly and professionally in the conditions of solving urgent educational tasks. This strategy is embodied in the orientation of a professionally-oriented educational process towards the formation of a teacher's personality, with a holistic humanistic outlook, deep professional knowledge, and comprehensively realizing his creative potential in his professional activity. It should be underlined that it is the personal position of the future teacher that is the primary basis of his innovative pedagogical activity. Thus, according to G. Kostyuk, motivation, the subject, methods of action and operations, communication, as well as understanding of intermediate and final results of activity are fundamentally important for the subject of pedagogical activity and the awareness of his goal [7, p. 139].

Innovative processes in science education today have become an integral part of social development as a main requirement of time. In this regard, the demand for an innovative style of pedagogical activity, which is characterized by the search for non-traditional approaches in solving educational problems, is growing.

The foregoing remarks are in line with modern processes of improving the structural organization of the formation of the natural and scientific competence of students, which are characterized by a departure from the traditional „subjectivity”. Thus, according to L. Neporozhnyia, new approaches to the implementation of Natural education should provide the basis for the formation of a modern educated person who has beliefs, worldview, an active citizenship, allowing integration into the socio-cultural environment, creatively responding to problems and challenges, being aware of his role in society and the world [9]. Thus, modern Natural education is based on a system of competencies, among which the subject-subject interaction of all participants in the educational process.

The implementation of the content of science education implies a certain level of training of future bachelors of Natural sciences, in particular moral maturity, activity, humanistic orientation and readiness for innovative pedagogical activity.

Modern scientists (in particular I. Gavriush, I. Dychkivska, O. Savchenko, V. Palamarchuk, I. Pidlasii) considers the future teacher's professional training as a means of forming his readiness for pedagogical activity, where readiness is the result and quality of higher education. So, taking into account the importance of professionally directed training of the future teacher, I. Dychkivska considers the readiness for innovative activity as an indicator of the ability of non-traditional, in a new way to solve actual problems for the personality-oriented education [2].

It is worth emphasizing that the readiness for innovative pedagogical activity of the future Bachelor of Science is the result not only of his professional and pedagogical training, but also of his personal activity in adapting to personal and social needs and interests, awareness of the need for changes in his professional strategy, understanding of the new behavior strategy, the presence of a broad interdisciplinary worldview. The basis for this is the creativity, motivation, mobility and innovative orientation of the future teacher.

Taking into consideration the innovativeness of education, T. Novitska considers Natural Science as an educational project of the present, which is faced with the task of forming a new type of thinking of the individual, which involves a complex activity to create and put into practice their own pedagogical innovations of various degrees of novelty [10]. Therefore, based on this statement, it must be stressed that the innovative pedagogical activity of the future Bachelor of Science as a special kind of pedagogical creativity is aimed at implementing the European strategy for updating the education system.

Being complex and multifaceted, the pedagogical activity of the future Bachelor of Science is primarily aimed at the development of the subject of the educational process, its transformation into a qualitatively new state, combining various operations and actions, which result in the formation of key vital competences. All these manifestations characterize the future teacher of Natural Sciences as the subject of innovative pedagogical activity. Besides, it seems possible to claim that the innovation activity of the future teacher of Natural Sciences can be considered as an effective tool that regulates pedagogical stereotypes.

Undoubtedly, the updated paradigm of pedagogical activity presupposes a different interpretation of the already acquired practical experience and on the basis of its appearing a new content of education that reflects the correlation, interdependence and complexity of all factors affecting its innovativeness, and are characterized as new or improved.

The professional characteristics of the future bachelor of Natural Science as a subject of innovative pedagogical activity are manifested in their totality, since the teacher as a person, an active subject of pedagogical interaction, is a holistic complex system that can be considered as a kind of generalized psychological portrait of a future specialist. It is to such a teacher that the most inherent developed professionally-subjective, personal characteristics [5, p. 73].

We shall notice, that innovative pedagogical activity structurally encompasses external (purpose, means of achievement, object of influence, subject of activity, result) and internal (motivation, content, operations) components of the educational process. Like any pedagogical activity, it performs cognitive, designing, constructive, communicative and organizing functions.

The defining feature of innovative pedagogical activity of the future Bachelor of Science is the personal approach and humanistic nature of his professional orientation. Nowadays, the innovative activity of the future teacher in the implementation of the content of school Natural education should comply with the following principles: integration of education in order to increase attention to the personality of each child, differentiation and individualization of the educational process, providing conditions for the full manifestation and development of the abilities of students and democratization as a prerequisite for development of joint student's creativity and teachers interested in their interaction [8].

In the context of the above, indicators of the readiness of future bachelors of Natural Sciences for innovative pedagogical activity are a set of personal and professional qualities, among which creation of favorable conditions for unlocking the potential of the student's individual abilities, turning him into a subject of his own activity.

According to the views of I. Dychkivska [2], indicators of innovative activity of future bachelors of Natural Sciences are:

- strong beliefs regarding pedagogical innovation at the level of self-reflection;
- implementation of the pedagogical activity of the progressive ideas of innovative teachers;
- focus on pedagogical creativity as a leading feature of professionalism;
- identification of competence to overcome the difficulties associated with the content and organization of innovative activities.

Thus, the readiness of future bachelors of Natural Sciences for innovative pedagogical activity is a natural result of professionally directed training, self-determination and self-development, which determines its subjectivity. Such active-oriented status as a complex quality of the future teacher's personality regulates his pedagogical activity and ensures its effectiveness.

Conclusions of the research. Subjectivity as an indicator of the innovation potential of future bachelors of Natural Sciences primarily involves the transformation of personal attitudes, values, orientations, and a system of motives for future professional activity. The innovative pedagogical activity of future bachelors of Natural Sciences from the point of view of the subjective approach determines new accents in the process of the educational field „Natural Science”. We add to the above that the teacher of the new formation is already the holder of innovative pedagogical activity, in the content of which the professionally directed qualities of the personality are integrated, which are the basis for the development of the subjectivity of the future bachelor of Natural Sciences.

Perspectives of further study of this direction. The prospects of further

scientific search can be seen in the specification of pedagogical conditions of formation and development of innovative pedagogical activity of future bachelors of Natural Sciences.

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