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Authors: Hrytsai Nataliia, Dereka Tetiana, Iskra Ulyana, Duyk Vadim, Tushko Klavdia, Malaniuk Nataliia, Romanyshyna Ludmila, Pochuieva Olha, Romanyshyna Oxana, Figol Natalia, Fomenko Larisa, Kharkivska Alla, Chykhurskiy Anatolij, Demjančuk Oleksandr
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The monograph considers the theoretical and practical aspects of the development of modern science, taking into account the experience of European countries and prospects of Ukraine. General issues of the history of pedagogy, theory and methodology of teaching and vocational education and so on, are considered. The publication is designed for scientists, lecturers, postgraduate students, students, as well as for the general reader.

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CHAPTER 13. PEDAGOGICAL SCIENCES

THE SYSTEM OF METHODOLOGICAL TRAINING OF FUTURE TEACHERS OF BIOLOGY

Hrytsai Nataliia¹

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Abstract. Methodical training of future biology teachers is an important part of the professional training of students of pedagogical universities. Methodical training plays a decisive role in the professional formation of students, as it directly affects the development of the professional qualities of a future specialist and the choice of a further professional path. The aim of the research is theoretical substantiation of the author's system of methodical training of future teachers of biology in pedagogical universities. The methodical training of future biology teachers is determined as the purposeful mastering the system of methodical knowledge, skills and acquirements of future specialists in the context of solving methodical tasks from the school biology curriculum. It was ascertained that the structural components of the system of methodical training are: goal (system-based component, on which all components depend on); content (basic subject – “Methods of teaching biology”, and subjects of methodical area); technologies, forms, methods and training aids; results of training (level of methodical readiness, individual methodical style). The conceptual model of the system of methodical training of future teachers of biology in pedagogical universities is developed and theoretically substantiated. It consists of five interconnected blocks: theory-methodological, motivational-value, substantial, process-technological and control-correctional. The theoretical and methodological block of the model consist of regularities, approaches and principles that determine the strategy of methodical training of future

¹ Doctor of Pedagogical Sciences,
Professor of the Department of Biology, Oncology and Medical Physiology,
Rivne State University of Humanities, Ukraine

biology teachers, regulate the tactics of its implementation and theoretically substantiate the aim, structure, content, technology, pedagogical conditions and the result of the training. The motivational-intentional unit provides comprehension the goals and objectives at each stage of the methodical training and form positive attitude concerning methodical activities. The substantial block of the model describes the content of methodical training, which supposes improving the content of discipline “Methods of Teaching Biology”, introducing in the educational process elective methodical disciplines, which suppose deepening, expansion, generalization of methodical knowledge of students, the formation of a methodical thesaurus, the involvement of future specialists in quasi-professional activities. Process-technological block of the model determines the forms of organization of training, as well as a set of traditional and innovative methods, means and technologies of teaching, types of research activities, pedagogical conditions whereby the content of methodical training is implemented. The process-technological block of the model is closely connected with the control-correctional block, which determines the level of methodical readiness of future biology teachers, characterizes the criteria, indices and levels of the formation of methodical readiness, forms and methods of control of students' methodical competencies.

1. Introduction

The National Doctrine of Education Development in Ukraine postulates that the training of pedagogical workers is an important condition for the modernization of education [15, p. 5]. One of the main tasks of pedagogical education development is to adjust the content of basic, psychological and pedagogical, methodical, informational and technological, practical and social-humanitarian training of pedagogical and scientific workers in accordance with the requirements of the information and technological society and the changes which take place in the social, economic, spiritual and humanitarian spheres, in pre-school and general education institutions [14].

Traditional pedagogy needed teachers who honestly performed their pedagogical work and promote learning and formation of skills and acquirements. Today we need creative teachers who will bring up the future generation, teachers with non-standard approach to life situations, teachers who can show cognitive activity and initiative, teacher who can critically analyse their own actions.

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The subject teacher should have such grounding which can provide the full development of the student's personality. Therefore, the teacher himself should be an example for imitation – extraordinary, erudite, initiative, and capable of reflexive activity and constant self-improvement.

First of all, teacher schools have to prepare teachers and not just biologists or physicists. These professions have a completely different object of activity and another scientific basis. In order to become not only a biologist, but a true teacher of biology, qualitative methodical training is required.

Native education needs a teacher who will implement his own methodical style in the educational process and promote the development of students' cognitive interests, their individual peculiarities.

On the basis of Ukrainian higher educational institutions' experience along with universities of other European countries (Poland, Czech Republic, Slovakia, Hungary, Slovenia, Bulgaria, Rumania, Germany, Belgium, France) principal tendencies of future biologists' methodical training enhancements has been determined: realization of competence oriented training, update of method training content, implementation of innovative methods and educational techniques, transition to informational and communicative techniques, development of new educational maintenance and distance training, increasing of the self-preparation role, strengthening of the connection between pedagogical theory and practice [6].

New trends in the development of school education, innovative pedagogical technologies, and the development of modern training aids stipulate for modernization of methodical training of future biology teachers.

In modern scientific researches, methodological training is considered as a system-based component of the professional training of future specialists. Thus, today it is important to review the traditional methodical training of future biology teachers, to fill it with new content, innovative forms, methods and training aids.

Methodical training plays a decisive role in the professional development of students, because it directly affects the development of professional qualities of the future specialist and the choice of a further professional path.

Methodical training of future teachers of natural sciences was studied by N. Burynska, M. Grinova, V. Onipko, L. Rybalko, N. Chaichenko, G. Chernobelska, O. Yaroshenko.

The system of methodical training of the subject teacher was the subject of studies of Ukrainian (M. Krylovets, L. Mykhailenko, N. Morse, V. Sharko) and

foreign (V. Zemtsova, N. Zelenko, O. Tamoznia, W. Stawiński, L. Tuszyńska, M. Švecová, K. Ušáková, E. Buchcic, I. Žeber-Dzikowska) scientists.

The problem of methodical training of future teachers of biology was studied by methodologists M. Verzylin, I. Moroz, D. Traitak and others.

In Ukraine the problem of methodical training of future teachers of biology in institutions of higher educational was studied by T. Bondarenko, N. Hrytsai, V. Verbytskyi, S. Vovk, G. Zhyska, M. Kolesnik, L. Mironets, N. Mishchuk, I. Moroz, A. Stepaniuk, Ya. Fruktova, O. Tsurul. But today the system methodical training of future teachers of biology in institutions of higher educational was not the subject of special scientific researches of native scientists.

There is no clear definition of the concept of “methodical training”, as well as understanding the importance of methodological education in the professional formation of the future teacher. Debate about the status of the methodology of teaching biology as an independent science does not fade.

The *purpose* of the research is theoretical substantiation of the author’s system of methodical training of future teachers of biology in pedagogical universities.

The *objective* of the study is to find out the essence of the concept of “methodical training”, to describe the system of methodical training of future teachers of biology, to develop a model of this system in order to introduce it into the educational process.

During the research the content of educational literature for students on the methods of biology training, educational programs of future biology teachers training, the educational and methodical support of the discipline “Didactics of Biology” and the elective courses of methodical direction were analysed. The model of the system of methodical training of future teachers of biology was developed.

2. The concept of methodical training

Methodical training is an important part of the professional training of future biology teachers.

According to N. Morse, methodical training at a pedagogical university is regarded as an “applied professional component” of the system of professional pedagogical education [12, p. 150]. L. Mykhailychenko believes that the methodical component synthesizes professional training [11, p. 38].

Methodical training of future biology teachers provides synthesis of objective biological, psychological, pedagogical and professionally sig-

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nificant methodical knowledge, abilities, personal qualities of the future teacher of biology. Despite the importance of methodical training in the professional development of students, there is no clear definition of this concept in the scientific literature nowadays.

Thus, methodical training is regarded as mastering by the future teacher the basics of methodical activity [13, p. 54].

According to T. Borovskikh, methodological training can be interpreted as a set of methodological competencies that provide successful work in a particular profession [3, p. 59].

According to G. Sarantsev, the methodical training of the future teacher is in mastering the activity, which is determined by the structure and functions of the teaching methodology of the subject as an independent scientific field [17, p. 63].

I. Levchenko believes that the fundamental methodical training of teachers is aimed at the acquisition of methodologically significant, systematic and invariant knowledge in the field of theory and methodology of education, which contributes to the formation of readiness for teaching students, the development and realization of the teacher's creative potential, his dynamic adaptation to the constantly changing social, economic, informational and technological conditions and provide new level of intellectual, emotional and moral culture of a teacher, creates an internal need in continuous self-development and self-education [10, p. 24].

So, the concept of "methodical training of a teacher" is often interpreted as a purposeful process of forming a system of methodological knowledge, skills and abilities. However, we agree with the Russian scientist L. Bulavintseva that methodical training cannot be reduced to a set of knowledge and skills about a certain fragment of objective reality, which are fixed in the curriculum and serve only as a means of solving methodological problems. That is why the researcher interprets the methodological training as "mastering the ways of solving professional problems in the format of teaching the subject" [4, p. 276].

Within the framework of the research, the methodical training of future biology teachers is determined as the purposeful learning of the system of methodological knowledge, skills and abilities of future specialists in the context of solving methodological problems of the school biology course.

According to N. Vereshchahina, methodical training should be considered as interrelated, complementary and interdependent processes:

- 1) the formation of methodical knowledge and skills as the basis of the formation of methodical competence;
- 2) mastering the basics of methodical activity, which results in readiness for such kind of professional activity;
- 3) the formation of the personal and professional position of future teachers [5, p. 18].

So, methodical training is a kind of bridge between pedagogical theory and practice that promotes the professional formation of future teachers of biology. In modern conditions methodology as a science becomes of special importance, since the methodically correctly constructed educational process at school provides a high-quality biological education of students. Hence, institutions of higher education have to pay more attention to the methodical training of future biology teachers.

3. System of methodical training

The system of methodical training of future biology teachers is a set of interrelated components of students' training in institution of higher educational, aimed at forming the methodical readiness to perform professional activity in the context of teaching a school biology course.

The structural components of the system of methodical training for future biology teachers are:

- purpose (system-based component, on which all other components depend on);
- content (basic discipline – “Methods of teaching biology”, methodical discipline);
- technologies: forms, methods and training aids (interactive technologies, contextual technologies, project learning, methodical workshop, case technology, portfolio, multimedia technologies, etc.);
- training results (level of methodical readiness, individual methodical style).

The important role in the system of methodical training play requirements for subjects of educational process (the list of methodical competencies, professionally significant and personal qualities etc.).

In order to modernize the traditional system of methodical training of future biology teachers in pedagogical universities, first of all it is necessary to develop its theoretical model, i.e. mentally form an ideal idea of rational ways of forming the required level of methodical readiness of

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future teachers. In the proposed model of the system of methodical training it is necessary to take into consideration the current trends in the development of education and the requirements for the personality of the teacher of biology.

The method of modelling is the subject of consideration of philosophers, psychologists, teachers, and others. As a result of the theoretical analysis of scientific literature it was discovered that simulation is a method of research, which consists in learning the qualities of an object, phenomenon or process through its model.

Modelling is the main category in the theory of cognition, which is based on theoretical and experimental methods of scientific research. This method is inextricably linked with abstraction and idealization. It allows separating those aspects of a simulated object, phenomenon or process that are reflected in the model. Modelling is considered as a method of indirect study of an object, during which not the object, but a specially created model is explored.

According to V. Zahviazynskyi, modelling is a process of creating models, schemes, sign or real analogues that represent the essential properties of more complex objects (prototypes) [7, p. 199].

The simulation method is used to in-depth study and comprehension of complex systems, the functioning of which depends on many factors and interconnections. Due to simulation, it is easier to get information about a particular object.

The New Dictionary of Foreign Words gives several definitions of the term “model”: 1) a sample of any new product, exemplary copy for serial production; 2) a scheme, a layout of something in a reduced form; 3) type, design mark; 4) the material for the artistic image [16, p. 394]. According to V. Kraievskyi, the model is a “system of elements, which reproduces some aspects, connections, functions of the observable object” [9, p. 333].

In pedagogical researches, model is considered as a prototype, an analogue (scheme, sign system) of an object, process or phenomenon, which is used to extend knowledge about the original. The model reflects in a simplified form the structure, properties, interconnections and relations between the elements of the observable object, the individual essential qualities of the original. Excessive detail, secondary phenomena complicate the model and interfere its theoretical study. V. Yahupov notes that “the model of the educational process is a reference idea of learning and its designing in conditions of specific educational institutions” [18, p. 227].

In the context of the research, the model serves as a mean of scientific cognition and as a prototype of the pedagogical process of methodical training of future biology teachers in pedagogical universities, as a model by which students can be trained in methodological work.

Conceptual model of the system of methodical training of future biology teachers is considered as integral vision of personal and professional development of the future teacher of biology and methodical support of his activity in accordance with the author's conception of the system of methodical training of future biology teachers. The main purpose of the development of the model is to improve and correct the system of methodical training of students-biologists which corresponds modern requirements.

V. Bezrukova states that pedagogical modelling (model creation) is the development of goals (general idea) of creation pedagogical systems, processes or situations and the main ways to achieve them. She believes that simulation is the first stage of pedagogical design. If in technology the model is a model that serves as a standard for serial production, then in pedagogy the model is the idea of organizing the educational process, the concept or pedagogical theory. The pedagogical model is a target ideal [1].

Based on the considered ideas about model and modelling, the study attempted to simulate the process of methodical training of future biology teachers.

4. Pedagogical conditions of innovative methodical training

The leading pedagogical conditions for the implementation of the future biology educators' methodical training system are the updating of methodical training content, the introduction of innovative teaching technologies and the creation of an individualized methodically oriented learning environment in pedagogical universities.

The content of methodical training includes the following components: cognitive (methodical competence), active and operational (experience and skills), personal (motives of pedagogical activity, values, professional qualities). Methodical training of students assumes simultaneous development of each of these components, namely, strengthening of students' methodical literacy, development of methodical competencies, formation of values as well as professionally significant qualities of a teacher, creative abilities, methodical reflection and motivation to methodical activity.

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It is also important to form the subjective experience of methodical activity and develop an individual methodical style during the methodical preparation of the future biology educators. The individual methodical style is a collection of personal and professional qualities of an individual, which determines the peculiarities of its methodical activity (means and methods) in relation to the implementation of the educational process in biology, providing the highest educational effectiveness.

The organization of the methodical training of future biology teachers at a higher educational institution involves lecture courses on the methods of teaching biology and other methodical disciplines, practical and laboratory classes, independent work, the implementation of individual teaching and research tasks, course and qualification works, pedagogical practice.

The “Methods of teaching biology” discipline (“Didactics of biology”) is a backbone element of future biology specialists’ methodical training. Structuring of discipline content is conducted in accordance with a real educational process at school and pedagogical university with a strong focus on achieving professional tasks, connection between theoretical preparation and the results of students’ pedagogical practice.

Learning the “Methods of teaching biology” discipline as a key component of students’ methodical preparation along with mastering of other methodology oriented disciplines combine the incorporation of traditional forms, teaching methods, and new technologies. Methodical disciplines include: “Methods of teaching biology”, “Methods of excursions on biology”, “Fundamentals of naturalistic work at school and extrascholastic establishments”, “Innovative technologies of teaching biology”.

A prominent place in the system of methodical training of future biology teachers is pedagogical practice, which provides an opportunity to determine the real level of students’ psychological and pedagogical, professional and methodical proficiency, to deepen and generalize this knowledge, to improve methodical skills, to identify pedagogical abilities and to gain experience in professional activities.

The introduction of educational resources for methodology directed disciplines, developed on the basis of modern approaches to methodological training of future biology educators contributes to the increasing of future teachers’ methodical readiness level.

Within the given experiment the textbooks of “Methods of teaching biology”, “Methods of teaching biology with a help of tables and charts”, “Meth-

ods of teaching biology in question-answer form”, “Innovative technologies of teaching biology”, “Methods of nature excursions preparation”, “Methods of preparation and conducting of biology excursions”, a working notebook with a printed basis for independent students’ work on “Methods of teaching biology”, guidelines for laboratory studies, teaching practice, writing term papers and dissertations that increase the quality of methodical preparation of future biology teachers have been developed, experimentally tested and practically implemented at higher pedagogical educational institutions.

Innovative teaching technologies (interactive technologies, contextual learning technologies, project technology, case technology, the “methodical workshop” technology, portfolio technology, information and communication technologies, distance learning technologies that contribute to the methodical formation of the future educator has been introduced into educational process.

The technologies indicated above are practice oriented and allow students to discover professional activity better, to reveal their pedagogical abilities and objectively evaluate them, to develop the necessary methodical competencies, to form positive motivation for the future profession and to create their own methodical product (manuals, lessons outlines, didactic cards, visuals).

The introduction of the distance learning elements, particularly through the uniquely designed site, containing educational and methodical materials on method related disciplines is definitely effective (<http://grytsai.rv.ua>).

An essential aspect of the future biology teachers’ methodical training in higher education institutions is the designing of such an environment that would develop the student’s personality along with the creation of conditions for his professional growth. During the methodology courses, students are immersed in an individualized methodically oriented learning environment in which they, as subjects of study, carry out certain inherent activities of biology teacher, and also realize their own trajectory of methodical formation. The content of methodical training compulsively involves methodical problems solving, organizing research activities of students (namely, working in the laboratory of biology teaching methods), studying the perspective pedagogical experience of biology teachers. One of the components of this environment is a specially equipped office of the biology teaching methodology, which encompasses the necessary textbooks, devices, equipment and technical recourses that promote the formation of the future biology teachers’ ability to organize an educational process on biology in a secondary school.

5. Structure of the model of methodical training system

In the predicted model of methodical training system of future biology teachers, the following interconnected blocks are distinguished: theoretical and methodological (defines the strategy of methodical training); motivational and purposeful (specifies the purpose and tasks of the methodical training of future teachers of biology, their motivation and the final training result); content (defines the content of methodical training of a biology teacher); procedural and technological (reveals the basic methods, means and forms of methodical training of students); control and correctional (defines control methods, level of methodical readiness of students, predicts the results of methodical training). The given model reveals features of the content and structure, the sequence, interconnection and mutual influence of all components of the process of methodical training of students-biologists in pedagogical universities.

The developed conceptual model of the system of methodical training of future biology teachers in pedagogical universities is presented in the form of a scheme (Fig. 1).

The theory-methodological (conceptual) block reflects the main ideas that underpin the methodical training of future biology teachers. The methodological base of the model consists of the regularities, approaches and principles that determine the strategy of methodical training of future biology teachers and regulate the tactics of its implementation, theoretically justify the purpose, structure, content, technology and result of the training of future teachers.

Among methodological approaches to modelling the methodical training of future teachers of biology, the following are: systemic, personally oriented, competent, active, context, environmental, reflexive and technological.

Such approaches are implemented during the selection of the content of education, determining of teaching technologies, the establishment of methods for quality control methodical training etc.

The regularities of the methodical training of future biology teachers include the following:

a) the interdependence of the purpose, content, methods and forms of methodical training, predefined level of development of the methodology of teaching biology, the requirements of educational standards and the real state of pedagogical practice;

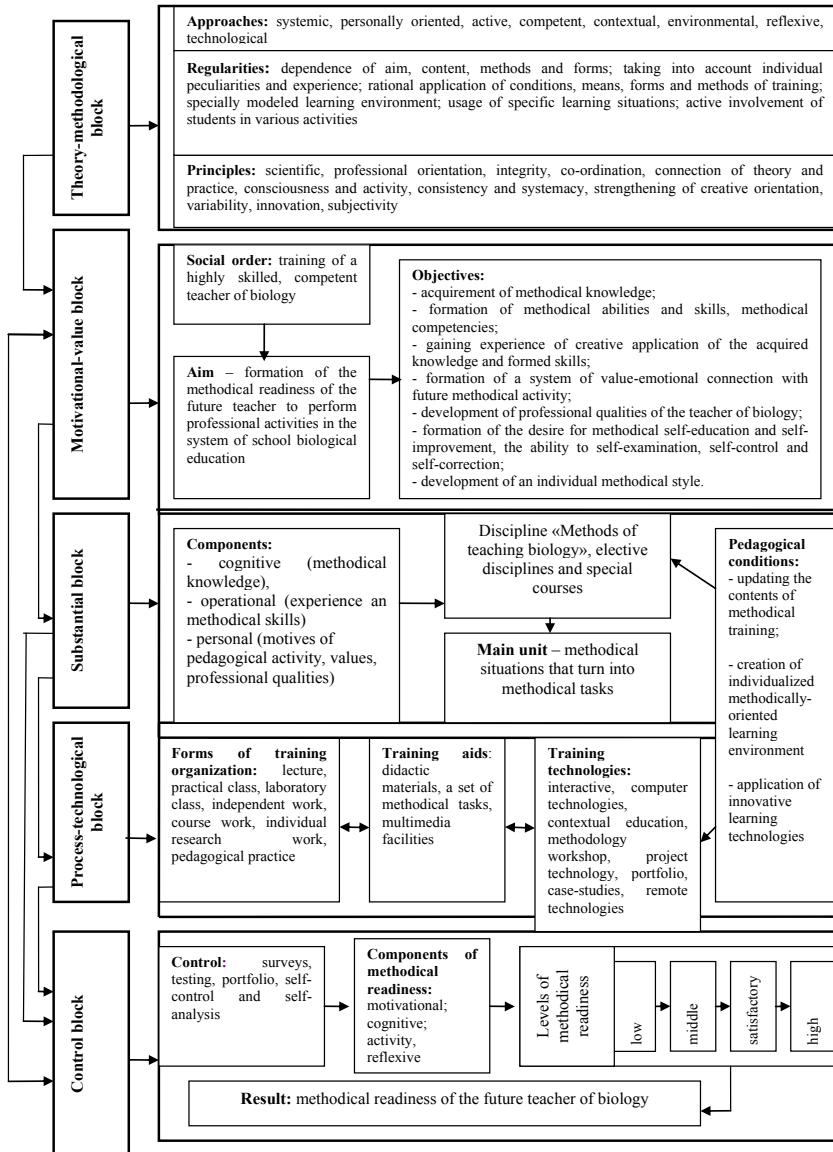


Fig. 1. Conceptual model of system of methodical training of future biology teachers in pedagogical universities

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b) the dependence of the results of methodical training on the students' awareness of the purpose and tasks of learning, the personal significance of the educational material;

c) the dependence of the effectiveness of methodical training on the motivation of students and taking into account their individual characteristics and experience;

d) the dependence of the effectiveness of methodical training on the rational use of conditions, means, forms and methods of teaching in their interrelation;

e) the dependence of the results of methodical training on a specially modelled methodically oriented educational environment;

f) the dependence of the effectiveness of methodical training on the use of specific learning situations from future pedagogical activity (contextual learning);

g) the dependence of the quality of methodical training on the purposeful interaction of the teacher and the student, the active involvement of students in various activities.

Important role in model creation play scientific principles – certain initial statements, regulatory requirements for the organization and conduction of the educational process. In the context of the study, the principles of methodological training of future biology teachers are: the principle of science, the principle of professional orientation, the principle of inerrability, the principle of coherence, the principle of theory and practice of communication, the principle of consciousness and activity, the principle of consistency and systemacy, the principle of strengthening the creative orientation, the principle of variability, the principle of innovation, the principle of subjectivity.

The *motivational-target block* of the model ensures that future specialists will be aware of the goals and objectives at each stage of the methodical training and forms a positive attitude regarding methodological activity.

The system of methodical training is focused on the tasks of teaching system – the teacher's training. The main goal of the system of higher pedagogical education is the professional training of high-qualified teachers in accordance with the social order, the formation of readiness for the future pedagogical activity.

We support the idea of N. Zelenko that the methodical training of future biology teachers should be based on the integrative unity of the educational

strategy of universities (the tasks of vocational and pedagogical education), on the one hand, and the professional interests and intentions (tasks) of students, on the other hand, which ensures the progress (advance) of future teachers from the basics teaching methods to the formation of author's methodical style [8].

Therefore, the motivation-target block of the model of methodical trainings was developed in accordance with the requirements of the educational institution, as well as the needs of the future teacher's personality.

The formation of a positive attitude of students towards professional activity in general and methodical activity in particular begins from the motivational-target block. Execution of any work is impossible without the motivational value spheres of the personality of the future teacher formed in a certain way. Therefore, the complex of tasks should be supplemented with the tasks of forming the motivation to master certain skills and qualities necessary for the professional activity of a future specialist.

We agree with N. Vereshchahina that the purpose of methodical training should be connected with the purpose of general, professional and post-graduate education, so that its implementation allows to build an individual educational route, taking into account the inclinations towards pedagogical profession, and its mastering it in institutions of higher educational and its further improvement in methodical activity [5, p. 58]. In addition, the goal must be correlated with some ideal, predicted result of methodological training, which determines the content and structure of the activity of teacher of biology.

The purpose of methodical training of future teachers of biology in modern conditions is the formation of methodical readiness of students to perform professional activities in the system of school biological education.

Motivational-target block of methodical training is represented by the unity of the main goal and system of tasks, the complex solution of which will ensure its achievement. In accordance with the goal specific tasks of methodical training are determined:

- a) acquiring methodical knowledge;
- b) the formation of methodical skills and methodical competencies;
- c) acquiring experience of creative application of the acquired knowledge and skills;
- d) formation of a system of value-emotional attitude towards future methodical activity;

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- e) development of professional qualities of the teacher of biology;
- f) formation of the desire for methodical self-education and self-improvement, the ability to self-examination, self-control and self-correction;
- g) the development of an individual methodical style.

The *content block* of the model of the system of methodical training of future biology teachers is a relatively independent component of the content of pedagogical education, which creates conditions for mastering the methodical aspects of pedagogical activity, mastering of basic knowledge, skills and abilities, values, norms and rules in the field of biology teaching techniques. In particular, this block is represented by three components: cognitive (methodical knowledge), activity-operational (experience and methodical skills) and personal (motives of pedagogical activity, values, and professional qualities).

So, the content of the methodical training of future biology teachers is a pedagogically adapted system of methodical knowledge, skills and abilities, methods of methodical activity, experience of its creative implementation and value-emotional attitude, which ensures the formation of methodical readiness of the future specialist.

The above-mentioned content is structured in the curriculum of the discipline “Methods of Teaching Biology”, as well as elective disciplines and special courses of methodical direction. In addition, the content of methodological training is realized during the pedagogical practice.

The content of the methodical training of future teachers of biology is presented by a special methodical thesaurus, based on which are the key methodical concepts that are formed during the study of methodical disciplines.

The selection of the content of methodical training is determined primarily by the peculiarities of studying the discipline “Methods of Teaching Biology”, which combines educational, quasi-professional and educational and professional activities. The content of this discipline is determined by the specifics of the teacher’s professional functions. In consideration of this, the acquiring of methodical knowledge and the development of methodological skills should take place in the context of future pedagogical activities.

The basic unit of the content of methodical training in the context of professional activity is the pedagogical situation (according to A. Verbytskyi, V. Ziahviazynskyi, etc.). One of the conditions for successful methodolog-

ical training is to turn these situations into methodological tasks and their solving by students.

In the content of methodical training it is necessary to combine theoretical and practical training, learning and research activity, implement interdisciplinary connections with other disciplines, provide continuity, systematic and continuous methodological training, optimal correlation between classroom work and independent work in non-auditing time, etc. In addition, it is necessary to organize the content of the methodical training of future biology teachers so that knowledge and skills are personally significant for each student [2, p. 25].

Thus, the content unit of the model describes the content of methodical training, which involves improving the content of the discipline “Methods of Teaching Biology”, parallel implementation into the educational process of elective disciplines, within which occur deepening, expansion, generalization of methodological knowledge of students, the formation of methodical thesaurus, the involvement of future specialists to the imitative types of professional activity.

The *process-technological block* of the model is based on the specifics of the content of the biology training methodology. This block determines the forms of organization of student training, as well as a set of traditional and innovative technologies, methods and training aids, types of research activities with the help of which the content of methodical training is implemented.

The application of contextual learning technologies, the use of interactive technologies, work in the methodological workshop, the development of methodological projects, the analysis of methodical cases, the creation of methodological portfolios will ensure not only the acquiring of methodical knowledge and the formation of skills, but also the development of research creative work, actualization of personal and professional experience, realization of an individual trajectory of methodical formation, formation of methodical reflection, development of individual methodical style.

Process-technological unit of the model provides realization of three components of methodical training:

- theoretical (lectures, independent work, writing essays, course papers);
- practical (laboratory lessons, pedagogical practice, solving methodical problems, game teaching methods);

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– personal (drawing up of methodical portfolio, authorizing pedagogical experience, self-regulation of methodical knowledge and skills).

This block is implemented during the interaction between students and teachers, the interaction of students with computers, methodical literature, etc. The methodical training of future biology teachers takes place in a purposefully modelled individualized methodically oriented learning environment during the whole period of studying at universities.

The main means of methodical training is a complex of teaching and methodical tasks. In addition, the means of training are textbooks, teaching aids, reference books, educational and methodical complexes of disciplines, notebooks with a printed matter, collections of tests etc.

The model indicates the leading pedagogical conditions that will promote improvement the quality of methodical training of future biology teachers.

The operating and technological unit of the model is closely connected with the *control-correction block*, which determines the level of formation of the methodical readiness of future biology teachers. This block describes the criteria and levels of the formation of methodical readiness, the forms and methods of controlling students' methodical competencies. The control and correction unit is aimed at finding out the effectiveness of methodical training of future biology teachers and stipulates for pedagogical diagnostics of the methodical readiness of the future teacher at various stages of methodical training, studying the effectiveness of each component, timely adjustment of the educational process.

6. Conclusions

The conceptual model of the system of methodical training of future biology teachers in pedagogical universities is developed in the unity of the theory-methodological, motivational-target, content, process-technological and control-correction blocks, in a concise form, presents information on the structure and content of methodical training, the main organizational forms of the educational process, technologies and training aids, diagnostics of methodical readiness of future specialists.

The model provides the use of traditional and non-traditional forms and methods of control, such as oral and written surveys, testing, protection of project, portfolio, etc. An important place takes self-control and self-examination, the development of methodical reflection of students.

As a result of the implementation the model of the system of methodical training of future biology teachers is formed methodical readiness for methodical activity which is the part of pedagogical activity. The organization of the educational process on the basis of the presented model will provide improving the quality of methodical training of future biology teachers in pedagogical universities.

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FEATURES OF FUTURE PHYSICAL EDUCATION SPECIALISTS' PERSONALITY'S ACME-TRAITS DEVELOPMENT

Dereka Tetiana¹

Iskra Ulyana²

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Abstract. There is a process of physical education specialists' personality's acme-traits development and forming during the acmeologically based lifelong vocational training explored in the article. The selection and modification of several methods carried out was done in the research, such as: test-questionnaire "Personality maturity"; questionnaire "Method of organizational ability assessment"; test "Determining of communicative abilities"; diagnosis of "Emotional intelligence" after N. Hall (following scales: emotional awareness, emotional control, empathy, recognition of other people's emotions); method "Self-assessment of person's creative potential". There were 194 students of "Physical education" specialty involved in the study. The control (98 people) and the main (96 persons) group of students were formed for the pedagogical experiment purposes. The control and experimental groups were homogeneous ($V_c = 17,3\%$; $V_e = 18,5\%$) at the beginning of the experiment. We used following standard methods of statistical data processing to analyse results of the study: the method of averages, the calculation of the Student's t-criterion, correlation and factor analysis. The interconnections of the acmeological competence components indicators were proved experimentally as a result of factor analysis such as: acme-motivation, cognitive-acmeological, acmeological-activity, personality's acme-traits (acme-motivational and personal, personal and professional, emotional and psychological, cognitive-acmeological and research). The biggest factor weight had the motivation of achievement (0,83), the ability to psychological proximity to other person (0,8), the attitude to them-

¹ Doctor of Sciences in Education, Associate Professor, Professor of Theory and Methods of Physical Culture Department, Makarenko Sumy State Pedagogical University, Ukraine

² PhD in Physical Education and Sports, Lecturer of Physical Education and Sports Pedagogy Department, Faculty of Health, Physical Training and Sports, Borys Grinchenko Kyiv University, Ukraine

self (“Self-concept”) (0.79), empathy (0.77), educational-cognitive motives (0,74), motives of prestige (0,71), professional motives (0,70). The personality’s acme-traits were grouped according to the strength of intercorrelation as a result of the correlation analysis. Strong correlation with the level of personality’s acme-traits development had following indexes: creativity of students ($r = 0,91$) and their communicative skills ($r = 0,91$), as well as organizational ability ($r = 0,89$), need of achievements ($r = 0,76$), the attitude to themselves (“Self-concept”) ($r = 0,74$) and the ability to psychological proximity to other person ($r = 0,74$). Significant correlation on the level of physical education specialists’ acmeological competence development had such acme-traits of personality as: sense of civic duty ($r = 0,65$), empathy ($r = 0,64$), ability to recognize the emotions of others people ($r = 0,6$) and emotional awareness ($r = 0,53$). Acme-trait of personality as management of emotions had a moderate influence on the level of physical education specialists’ acmeological competence development ($r = 0,44$) as it was showed by correlation analysis. The level of personality’s acme-traits development as a component of the physical education specialists’ acmeological competence in the process of continuing vocational training based on acmeology for the experimental group of students was 73,9%. This indicator was 54,68% in the control group, that is 19,22% less than for the experimental group. Prospects for further research are the acmeological approach application to the training of specialists in physical education at the PhD level.

1. Introduction

Professional training of physical education specialists is increasingly aimed at achieving high professional qualifications, the ability to continuous development and compliance with modern requirements. The main characteristics of the modern physical education specialists professional training are the value attitude to the health, the need to implement the state strategy for the development of the young people physical education system, forming the responsible attitude to their own health and to a healthy lifestyle, creating conditions for complete physical and moral development.

The problem of professional forming and development of the person, its self-improvement is the key one for such a branch of science as acmeology. That is why professional training of physical education specialists should be aimed at the forming, development and implementation of individual acme-traits, stimulating and promoting the achievements of the highest level of

professional and personal acme in the conditions of increased competition on the modern labor market.

According to N. Kuzmina, modern acmeology is a branch of scientific knowledge, a complex of scientific disciplines, which object of study is a person in the dynamics of self-actualization of its creative potential, self-development, self-improvement, self-determination in various spheres of life, independent professional activity, system of improvement qualifications [7, p. 18]. The researcher notes that an important component of acmeological competence is personality's acme-qualities which provide a man the movement to the intended achievements. According to scientists, if the akmeological approach is applied then the leading role will be played by the problems of professionals' creative abilities development taking into account various aspects of their preparation and improvement [1, p. 6-7].

O. E. Antonova determined the factors contributing to the development of pedagogical talent and the pedagogical mastership forming (on the examples of Y. A. Komensky, K. D. Ushinsky, A. S. Makarenko) using the biographical method of distinguishing the qualities of a talented teacher [2, p. 24]: a favorable educational environment; thorough high education; conscious choice of the teaching profession; wide horizons, encyclopedic knowledge; workability, perseverance; desire of self-education; creativity; the ability to start everything from the beginning, to overcome difficulties, the power of will; influence of strong personalities; oratory gift; literary gift; love for children.

Researchers note that the modern teacher of physical education should possess following personality's traits [9, p. 93]: the desire for self-education, love for children, reasonable demands, sense of measure, pedagogical tact, personal example, ability to control their activity and behavior, observancy, ingenuity, ability to use voice, facial expression, gesture, pedagogical intuition.

A physical education specialist has an important task to fulfill nowadays. It is to promote a harmoniously developed personality's forming. Therefore, in our opinion, the teacher should have such professionally important personality's acme-traits: well developed integral mental capacities of the personality (such as attention, memory, thinking), mental characteristics (emotional warmth, patience), personal and professional qualities (organization, communicative, responsible, discipline, initiative, creativity), volitional qualities as a personality will [5, p. 58].

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According to V. D. Gladkov, it is important to take into account the acmeological invariants of professionalism – the main properties, qualities and skills of a professional, providing high efficiency and stability of the activity, regardless of its content and specificity [3, p. 18]. A. A. Derkach's studies state that the concept of professional acmeological invariants makes it possible to significantly accelerate the processes of individual and professional development of a specialist [6, p. 143].

However, the process of physical education specialists personality's acme-traits forming while their vocational training based on the acmeology researchers has not been studied.

So the **aim** of the research was to investigate the process of physical education specialists personality's acme-traits forming in the process of acmeologically based continuous vocational training.

So tasks of the research were:

1. To find out the peculiarities of the physical education specialists personality's acme-trait in the process of continuous vocational training based on the acmeology principles.

2. To substantiate the interinfluence and interdependence of personality's acme-traits as a component of physical education specialist's acmeological competence.

3. To study the peculiarities of the physical education specialists' acme-traits forming in the process of continuous vocational training based on the acmeology.

2. Research methods

There were 194 students learning for the bachelor degree in “Physical education” involved in the study. There were two groups formed for the pedagogical experiment – control group ($n = 98$) and experimental group ($n = 96$). The control and the experimental groups were homogeneous at the beginning of the experiment (variation indexes were for the control group $V_c = 17,3\%$; for the experiment $V_e = 18,5\%$). The difference between the control and the experimental groups was statistically not reliable ($p > 0,05$) at the beginning of the experiment. The selection and modification of several methods carried out was done in the research, such as: test-questionnaire “Personality maturity”; questionnaire “Method of organizational ability assessment”; test “Determining of communicative abilities”; diagnosis of “Emotional intelligence” after N. Hall (following scales: emotional aware-

ness, emotional control, empathy, recognition of other people's emotions); method "Self-assessment of person's creative potential". The research was conducted in Boris Grinchenko Kyiv University during 2009-2016.

We used following standard methods of statistical data processing to analyse results of the study: the method of averages, the calculation of the Student's t-criterion, correlation and factor analysis. There was the statistic software "Statistica" [8] used to analyze results of the pedagogical experiment.

3. Conceptual idea of continuous professional training

The leading conceptual idea of physical education specialists' continuous professional training based on the principles of acmeology is the thesis that if the specialists' professional training involves the forming of motivation and the ability to achieve the acme by implementing his own professional acme and personal traits then his continuous professional and personal development, self-development and self-improvement of the physical education specialist will continue during the whole life and professional activity in the conditions of a globalized world, the integration and informatization of modern education systems.

We made an assumption that if the specialist has an acmeological competence formed in the process of continuous professional training at a higher educational institution, he will be able to continue solving professional problems of various levels of complexity, lifelong education, self-development and self-improvement [4, p. 53; 11, pp. 99-102].

The author's concept of continuous professional training of physical education specialists on the principles of acmeology is realized in the process of learning in the higher educational institution and is aimed at the acmeological competence forming at all levels of higher physical education. The accents differed in the acmeological competence forming in the process of physical education specialists' continuous professional training on the principles of acmeology. Accents shifted from the initial level of higher education to the bachelor's and master's levels.

At the initial level of higher education, the acme-motivational component of acmeological competence is predominantly formed by specialists in physical education as a set of motivations and conditions that determine, activate, direct and regulate acme-oriented self-development of a specialist.

At the undergraduate level of higher education students, the emphasis is

shifted to the forming of the cognitive-acmeological component of acmeological competence during the study of the disciplines of the humanities, socio-economic, natural sciences, professional and practical training cycles.

At the master's level of higher education, professional training focuses on the forming of acmeological-activity components of acmeological competence in the process of students' independent work and researches.

There are personality's acme-traits being improved at all levels of education in the process of physical education specialists' continuous professional training based on the acmeology principles. And this acme-traits contribute to the personality's activity manifestation in the professional development process and also constant self-development and self-development as a specialist [5, p. 58].

The result of physical education specialists' continuous professional training on the acmeology basis is a graduatee's acmeological competence formed, as an integrated quality that provides the ability and acme-motivation of the individual to continuous learning, self-improvement, self-development throughout life [10, pp. 59-62].

4. Interconnection of components of acmeological competence

We compared results of the pedagogical experiment obtained for the experimental and the control groups by using cluster analysis. The biggest difference obtained between the levels of acmeological competence (Var2) and its components for the students of the control and experimental groups. There was the acme-motivational component (Var3) of the physical education specialists' acmeological competence obtained to be the most labile as a result of the cluster analysis application. So affecting this component, especially in the initial and first and second bachelor levels of higher education, we can activate and direct acme-oriented self-development of physical education specialist (Fig. 1).

To verify the author's concept of physical education specialists' continuous professional training based on the acmeology principles, we used a factor analysis. As a result of factor analysis, there were following interconnections of the indicators of acmeological competence components proved experimentally: acme-motivation, cognitive-acmeological, acmeological-activity, personality's acme-traits (acme-motivational and personal, personal and professional, emotional and psychological, cognitive-acmeological and research) (Fig. 2).

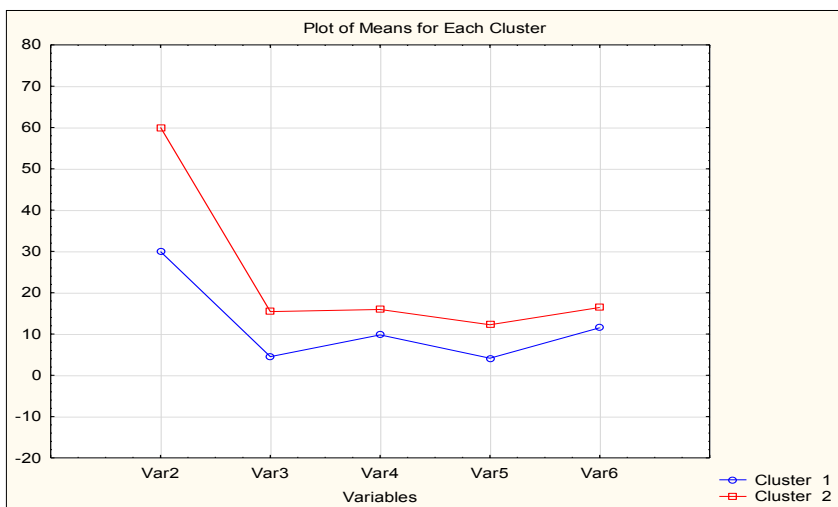


Fig. 1. Cluster analysis results of the physical education specialists' acmeological competence level its components

Var2 – specialists' acmeological competence; Var3 – acme-motivational component; Var4 – cognitive-acmeological component; Var5 – acmeological-activity component; Var6 – acme-traits of personality; Cluster 1 is a control group of students; Cluster 2 is an experimental group of students.

Consequently, components of acmeological competence (acme-motivation, cognitive-acmeological, acmeological-activity and acme-quality personality) are formed, developed, improved, being in mutual communication, and affect each other.

The indicators of the acme-motivational and personal factors (1) were following: the motives of prestige, professional motives, educational and cognitive motives, the motivation of achievement, and the components of the personal component: the attitude to himself ("Self-concept"), the ability to psychological proximity to another person, empathy.

Indicators of the personal and professional factors (2) were following: organizational skills, communicative abilities, the need of achievement, creative potential of the individual, social motives.

Indicators of emotional and psychological factors (3) were following: self-motivation, emotional awareness, other persons' emotions recognition (diagnosis of "Emotional intelligence").

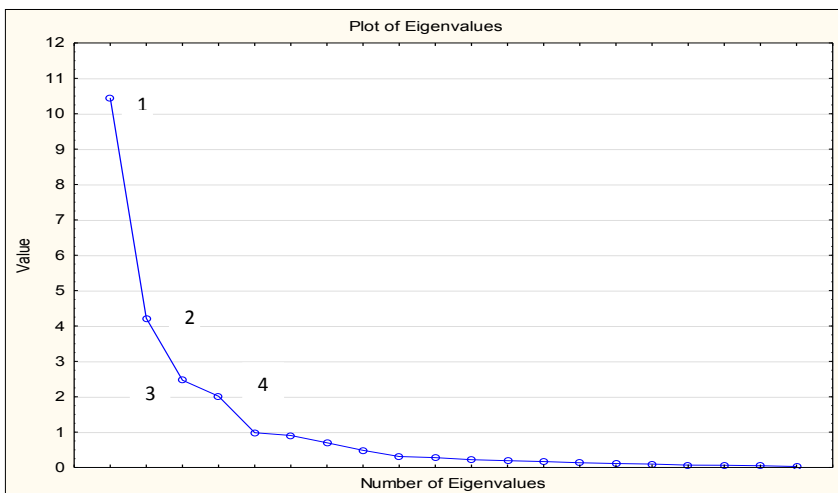


Fig. 2. Indicators of factor analysis of the grouping of indicators of physical education specialists' acmeological competence components: acme-motivational and personal (1), personal and professional (2), emotional and psychological (3), cognitive-acmeological and research (4).

The indicators of the cognitive-acmeological and research factor (4) were following: the results of research work of students, the integral indicator of the motivation of activity.

This four selected factors covered 79,8% of all indicators of acmeological competence components. Thus, the accumulated percentage of the dispersion of the four factors indicates that we sufficiently fully describe our obtained data by applying the factor analysis. The total percentage of dispersion for each factor indicates its significance. The most significant factor obtained in our research is the acme-motivational and personality factor, which has the highest percentage of total dispersion of 43,53%. Acme-motivational and personal factor includes the most variables (constituent components of acmeological competence). Let us analyze the quantitative values the first factor objects with the help of the “factor scores” indicator. The greatest factor weight has the motivation of achievement (0,83), the ability to psychological proximity to another person (0,80), the attitude to themselves (“Self-concept”) (0,79), empathy (0,77), educational-cognitive motives (0,74), motives of prestige (0,71), professional motives (0,70).

These indications also have a high correlation within the acme-motivational component and acme-traits of personality.

Acme-traits of personality, which according to the cluster analysis is not very labile, but can be improved at all educational levels and facilitate an activity in individual life long learning, self-development and self-improvement of physical education specialist.

The personal and professional factor makes 17,6% of the total dispersion, which indicates its sufficient significance. The biggest factor weight with social motives (0,68), the need for achievement (0,57), communication skills (0,56), organizational skills (0,55), creativity identity (0,48).

These acme-traits of personality have a high rate of correlation coefficient, which indicates a strong link with the result, the level of physical education specialists' acmeological competence level.

Acme-traits of personality is the basis for the professional development of a specialist in the process of studying at a higher educational institution and contributes to its self-development, self-improvement throughout life.

Emotional and psychological factor makes 10,3% of the total variance, indicating the importance of professionally important qualities of mental properties of the individual teacher, psychological characteristics (emotional warmth, patience) personal and professional skills (organization, communicative, responsibility, discipline, initiative) in professional activities, the result of which is the forming of a harmoniously developed personality of pupils and students. The greatest factor weight is the recognition of other people emotions (0,7), emotional awareness (0,6) and self-motivation (0,5).

5. Correlation analysis of personality's acme-traits forming

Akme-traits of personality can be improved at all levels of education in the continuous process of physical education specialists' professional training based on the acmeology principles. Its contribute to the manifestation of personality activity in the process of learning, self-development, self-improvement, achievement of personal and professional acme.

Acme-traits of personality as a component of the physical education specialists' acmeological competence forming indicators are presented on Figure 3.

Acme-traits of the personality as an acmeological competence component we researched analyzing the level of physical education students following acme-traits: organizational skills, communicative abilities, cre-

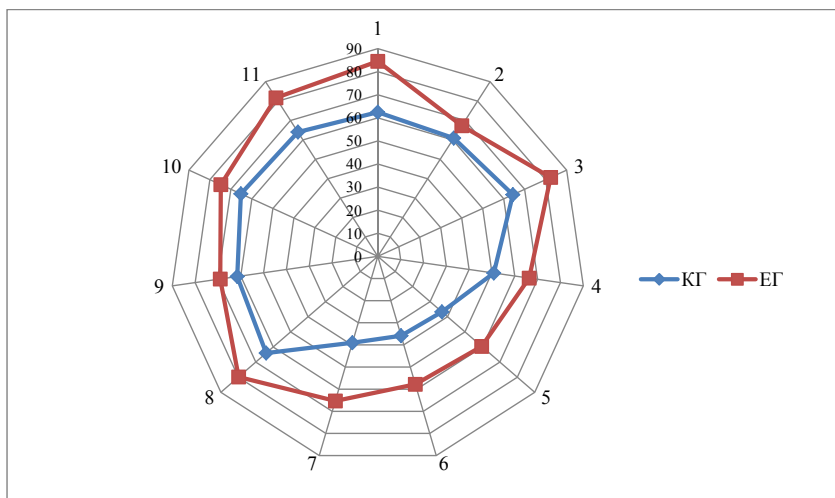


Fig. 3. Model of the acme-traits of personality as a component of the physical education specialists' acmeological competence forming indicators

1 – the attitude to himself (“Self-concept”); 2 – a sense of civic duty; 3 – the ability to psychological proximity to other person; 4 – organizational abilities; 5 – communicative abilities; 6 – creative potential (creativity); 7 – the need of achievements; 8 – emotional awareness; 9 – managing emotions; 10 – empathy; 11 – recognition of other people emotions.

ative potential (creativity), the need for achievement, emotional awareness, emotional management, empathy, psychological ability proximity to another person, recognition of emotions of other people, attitude to himself (“Self-concept”), a sense of civic duty.

As a result of the cluster analysis, we revealed that the level of acme-traits of personality is the most stable component of the physical education specialists' acmeological competence. Therefore, acme-traits of personality is mostly inherited from parents, their forming takes time, so they are improved at all levels of education and throughout life, as a result of self-development and self-improvement.

Forming of acme-traits of personality as a component of physical education specialists' acmeological competence is going unevenly during the learning in a higher educational institution, and its indices have a different influence on the final level.

As a result of the correlation analysis, we revealed the strength and direction of mutual influence of acme-traits as a component of physical education specialists' acmeological competence. We grouped acme-traits of personality in accordance to the strength of the correlation relationship.

Thus, a high correlation with the level of acme-traits of personality forming has creativity of students ($r = 0,91$) and communicative skills ($r = 0,91$), as well as organizational abilities ($r = 0,89$).

Creativity level as a systemic trait of intelligence, a set of features of the human psyche that ensures the implementation of his own individuality was 57,8% for students of experimental group in the end of study at the master's level of high education. In the control group, the figure was 35,86%, which is 21,9% less than for the experimental group.

Such important traits for the professional activity of physical education specialists as communicative abilities, ability to communicate with colleagues and parents or students, the ability to find the right approach to them, the ability to predict the result of pedagogical action, were formed on 59,6% in the experimental group during the process of vocational training. This indicator was 36,76% for the control group, that is 22,8% lower than for experimental group.

The index of organizational abilities (as an ability to organize the activities of the team and optimize their own activities (to plan and control)) for students of the experimental group in the process of continuous vocational training on the acmeology basis of was 66.3%. At the same time, in the control group the level of organizational skills was 50,79%, which is 15,5% less than result for the experimental group of students.

The next group of personality acme-traits, which according to the correlation analysis results have a high correlation with the level of acmeology competence component are: the need of achievement ($r = 0,76$), the attitude to himself ("Self-concept") ($r = 0,74$) and the ability to psychological proximity to another person ($r = 0,74$).

The need of achievements as one of the main acme-traits of the individual, especially for physical education students, the desire to surpass the already achieved level of performance, a competition with himself or with others is a basis of persistence in obstacles overcoming. For experimental group students the need for achievements was formed on the 65,3% in the process of continuing vocational training based on the acmeology principles. For the students of the control group the figure was 39.1% during the

corresponding period of study, which is 26.25% less than for the experimental group.

“Self-concept”, which includes awareness of their physical and intellectual natural traits, self-esteem and subjective perception, which characterizes the influence on the own personality of external factors for experimental group students was 84,5% in the process of continuous vocational training on the acmeology basis. In the control group, the level of the attitude towards their Self was 62,46% which was 22,04% lower.

Ability to psychological proximity to another person, the ability of listening, the need for moral proximity are important for people who chose the occupation of “man-to-man” type. The level of this component of personality’s acme-traits as a component of acmeological competence for experimental group students was 82,4%. The students of the control group for this indicator had 64,36%, which was 18% less than the main group.

As a result of the correlation analysis, we have identified a group of personality’s acme-traits which have a significant correlation and interact with the level of this acmeological competence component for physical education specialists.

Therefore, a significant correlation with the level of personality’s acme-traits has a sense of civic duty ($r = 0,65$), empathy ($r = 0,64$), ability to recognize emotions of other people ($r = 0,6$) and emotional awareness ($r = 0,53$).

The sense of civic duty associated with such personal traits as patriotism, interest in the phenomena of social and political life, a sense of professional responsibility, the need for communication and collectivism at the present stage of Ukrainian society development is a prerequisite for the forming of a competent, competitive modern teacher, who is able to bring up a young generation of Ukrainians. The level of a sense of civic duty as an integral part of personality’s acme-traits as a acmeological competence component for students experimental group was 67,3%. For the control group students, the figure is 60,9%, which was 6,4% less than the main group. In our opinion, the contradictions that currently exist in the country social and political life, have controversial and not very positive impact on this trait development for students.

Empathy as an ability to empathize, to feel and understand feelings of other person, the need for selfless creation of favorable conditions for person’s in need of support positive emotional state and vital activity, is an important personality’s acme-trait and not only for physical education

specialists, but also is one of indicators of a high level of humanistic component development and the moral of society as a whole. The experimental group students in the process of continuous acmeology based vocational training the level of empathy as a personality's acme-trait index was 74,8%. For the control group students this indicator was 65,21%, which is 9,59% lower than for the experimental group.

Recognizing the emotions of other people is an indicator of the "emotional intelligence" of the individual which shows the person's ability to control the collocutor's emotional status and feelings, to feel and recognize the emotional component of interpersonal relationships. It is important to develop this personality's acme-trait as a component of acmeological competence in the occupation of "man-to-man" type such as educator. The experimental group students' level of this trait was 81,65% in the process of acmeology based continuous vocational training. In the control group this trait development was 64% that was 17,65% less.

Emotional awareness reflects the level of human understanding of the content of normalities and phenomena of affective life, an understanding of what emotional reaction can cause any event, word or doing. In the experimental group, the level of emotional awareness was 79,8%, which was 15,77% more than in the control group, in which the figure was 64%.

Management of emotions as a personality's acme-trait has a moderate correlation with the level of this physical education specialists' component of acmeological competence ($r = 0,44$) as it was revealed by the correlation analysis.

Management of emotions reflects the individual's ability to estimate and control the extent of external psycho-traumatic factors impact on his emotional state (ability to protect himself from negative emotions). The level of ability to manage emotions in the control group was 69% in the course of acmeology based continuous professional training of physical education specialists, which was only 7,45% more than in the control group (61,55%).

Thus, the level of personality's acme-traits development as a component of the physical education specialists' acmeological competence in the process of continuous acmeology based professional training on the all levels of higher education was 73,9%. In the control group of students this indicator was 54,68%, that was 19,22% less than the experimental group.

Analyzing the level of personality's acme-traits development as a component of the physical education specialists' acmeological competence in

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the process of continuous acmeology based vocational training we revealed that in the experimental group of students it was 73,9% in general. The level of this component development in the control group was 54,68 %, which was 19,22% less than the experimental group.

Analysis of the results obtained after the pedagogical experiment indicates that the experimental group students achieved statistically significant differet level of both the level of acmeological competence as a whole development, and in levels its components development ($p < 0,05$). There was a certain dynamics for students of the control group, but there were no statistically significant differences neither in the level of acmeological competence development nor in its studied components ($p > 0,05$).

In order to improve the quality of physical education specialists' professional training, as a result of correlation analysis, we determined the relations and interinfluence of acme-motivational, cognitive-acmeological, acmeological-activity components and personality's acme-traits on the level of acmeological competence development. The analysis of the dynamics of physical education students' acmeological competence development is given in Table 1.

Table 1

Dynamics of levels of acmeological competence development for the physical education specialty students

№	Indicators	Control group, %				Experimental group, %			
		Before experiment	After experiment	Change rate (t-criteria)	Statistical significance of differences	Before experiment	After experiment	Change rate (t-criteria)	Statistical significance of differences
1	Acmeological competence	51,5	62,25	10,25	$p > 0,05$	51,3	78,69	27,39	$p < 0,05$
2	Acme-motivational component	54,6	63,3	8,7	$p > 0,05$	55,2	84,3	29,1	$p < 0,01$
3	Cognitive-acmeological component	65,8	75,4	9,6	$p > 0,05$	65,4	88,0	22,6	$p < 0,05$
4	Acmeological activity component	49,6	55,6	6,0	$p > 0,05$	50,3	68,54	18,24	$p < 0,05$
5	Personality's acme-traits	43,5	54,68	11,18	$p > 0,05$	44,3	73,9	29,6	$p < 0,01$

A high correlation of the level of acmeological competence development can be observed with the acmeological activity component ($r = 0,81$), acme-motivational ($r = 0,78$) and cognitive-acmeological ($r = 0,71$). We found a significant correlation of the level of acmeological competence development with personality's acme-traits ($r = 0,5$).

To verify the author's concept of physical education specialists' continuous professional training based on the acmeology principles we used a factor analysis. As a result of factor analysis, the interconnections of the acmeological competence components indicators were proved experimentally: acme-motivation, cognitive-acmeological, acmeological-activity, personality's acme-traits (acme-motivational and personal, personal and professional, emotional and psychological, cognitive-acmeological and research).

6. Discussion of the study results

As a result of the study of the physical education specialists' personality's acme-traits peculiarities development in the process of acmeologically based continuous training we added a data to the study done by N. V. Kuzmina. The concept of "acmeological competence of physical education specialists" is defined, which is understood as the integrated ability of the individual. It could be developed in the process of continuous acmeologically based vocational training, and reflects the ability of a specialist to build his own self-development with constant complication of tasks and increasing the level of achievements for training, self-development and self-improvement throughout life, achievement of personal and professional acme.

We have theoretically substantiated the components of the acmeological competence of the physical education specialists (such as acme-motivational, cognitive-acmeological, acmeological-activity, personality's acme-traits), which confirms the data of Y. V. Andriyenko about the importance of personality's acme-traits as a component of acmeological competence. According to our research, the list of personality's acme-traits of the physical education specialists was added by following: desire for self-education, love for children, reasonable demands, sense of measure, pedagogical cycle, personal example, ability to control their activities and behavior, observation, ingenuity, ability to use voice, facial expressions, gesture and pedagogical intuition. As before there were personality's acme-traits proposed by B. Mitzkan, T. Zavgorodna, A. Shpilchak, G. Preszta, I. Vipasnyak,

B. Lisovsky, the following as following: creative potential (creativity), communicative abilities, organizational skills, the need of achievements, the attitude to himself (“Self-concept”), the ability to psychological proximity to other person, a sense of civic duty, empathy, the ability to recognize the emotions of others, emotional awareness and emotion management.

There were data obtained by V. D. Gladkov, A. O. Derkach confirmed concerning the acmeological invariants of professionalism as the basic traits of the specialist personality that ensure the efficiency and stability of future professional activity.

For the first time there was determined the total percentage of dispersion, which indicates the importance of acmeological competence components, which involves the development of physical education specialists’ personality’s acme-traits as its components: acme-motivational and personal components, personal and professional emotional and psychological. Also, for the first time, we determined the strength of correlation influence of acme-traits as a component of physical education specialists’ acmeological competence: a high correlation relationship was for creative potential (creativity), communicative abilities, organizational skills, the need to achievements, the attitude towards himself (“Self-concept”), the ability to psychological proximity to other person; significant correlation was between such personality’s acme-traits as a sense of civic duty, empathy, ability to recognize the emotions of others, emotional awareness; moderate bond was between personality’s acme-traits and emotions control as a result of correlation analysis.

7. Conclusions

Thus, we have established that the formation of personality’s acme-traits as a component of physical education specialists’ acmeological competence occurs unevenly during studying in a higher educational institution, and its indices have a different effect on the final level of their formation. The following conclusions were made in accordance to the study results:

1. The level of development of personality’s acme-traits as a component of the physical education specialists’ acmeological competence for the experimental group of students in the process of continuous acmeology based vocational training at all levels of higher education was 73,9%. In the control group of physical education students this indicator was 54,68%, which was 19,22% less than for the experimental group.

2. The general percentage of dispersion was determined, which indicated the importance of following acmeological competence components: acme-motivational and personal components had a general percentage of dispersion of 43,53%, personal and professional – 17,6%, emotional and psychological – 10,3%, cognitive-acmeological and research – 8,4%. Specialists' personality's acme-traits are elements of these components.

3. As a result of the correlation analysis, we determined the strength of correlation influence of acme-traits as a component of physical education specialists' acmeological competence. We grouped the personality's acme-traits by the power of the correlation relationship: the high correlation with the level of the development of personality's acme-traits had creative potential (creativity) ($r = 0,91$) of students and communicative abilities ($r = 0,91$), as well as organizational ability ($r = 0,89$), the need of achievements ($r = 0,76$), the attitude towards himself ("Self-concept") ($r = 0,74$) and the ability to psychological proximity to other person ($r = 0,74$). A significant correlation with the level of development of personality's acme-traits had a sense of civic duty ($r = 0,65$), empathy ($r = 0,64$), ability to recognize emotions of other people ($r = 0,6$) and emotional awareness ($r = 0,53$). Moderate interinfluence on the level of formation of physical education specialists' acmeological competence had personality's acme-trait as control of emotions ($r = 0,44$).

However, the study of the formation of personality's acme-traits of physical education specialists in the process of acmeologically based continuous professional training does not exhaust the entire problem. The further promising areas of research could be the application of the acmeological approach to the training of physical education specialists at the PhD level.

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**FEATURES OF THE PHILOSOPHY PROFESSIONAL METHODS
(APPLICABLE AND THEORETICAL ASPECTS)**

**ОСОБЛИВОСТІ МЕТОДИКИ ВИКЛАДАННЯ ФІЛОСОФІЇ
(ПРИКЛАДНИЙ ТА ТЕОРЕТИЧНИЙ АСПЕКТИ)**

Duyk Vadim¹

Tushko Klavdia²

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Abstract. The article is devoted to the problem of teaching the discipline of philosophy in institutions of higher education. The authors discovered the peculiarities of the methodology of teaching philosophy. Particular attention is devoted to the analysis of such a form of learning as a lecture-essay. In order to confirm the effectiveness of the presented method, the results of the experimental study are presented. The purpose of this article is to analyze the methodology of teaching philosophy in institutions of higher education. The subject of the presented research is the ways of improving the professional training of future specialists on the example of studying the discipline of philosophy. After studying the domestic and foreign experience of methodology of teaching philosophy in institutions of higher education, we have made a choice regarding its optimization, the fixation of the state of formation of professional competence of future specialists of the border department in the process of studying philosophy is constantly carried out. We take into consideration the fact that the subjects of training, which show reasonable optimism about their potential successes, confidence in their future professional activities, are free and open in communicative positions, seek to work on their own self-improvement, set realistic goals, achieve success. In order to confirm the above, at the

¹ Candidate of Pedagogical Sciences, Associate Professor, Associate Professor of the Department of Pedagogy and Socio-Economic Disciplines, National Academy of the State Border Guard Service of Ukraine named after Bogdan Khmelnytsky, Ukraine

² Candidate of Pedagogical Sciences, Associate Professor, Associate Professor of the Department of Pedagogy and Socio-Economic Disciplines, National Academy of the State Border Guard Service of Ukraine named after Bogdan Khmelnytsky, Ukraine

beginning of the first course, among the students of all specialties were conducted questionnaires, interviews, individual interviews, using the method of “unfinished thought” in particular. Thus, by studying the sphere of interests of first-year students, which may affect their professional training and self-realization of the future specialist, we defined the task of our experiment on the effectiveness of the proposed methodology of teaching philosophy in higher education institutions. Therefore, the proposed and applied author's methodology of teaching philosophy allows to determine the levels of formation of professional competence of future specialists, provides wide opportunities for correction of work with the academic group and for individual work with individual students. The features of the methodology of teaching philosophy in institutions of higher education mentioned in the article are author's. Any technique can provide for improvement and transformation. Such a question may be the basis for further research in the presented problem.

1. Вступ

Сучасний світ змінюється шаленими темпами, гуманізм та толерантність досить часто перестають бути загальнолюдськими цінностями, а сприймаються крізь призму наукових понять, які із реальним життям не мають нічого спільного. Саме на таких історичних етапах кризи моралі та втрати суспільної рівноваги, гуманітарне знання взагалі та філософія зокрема, набували «нового дихання». Тому аналіз філософської спадщини людства стає тим стимулом, який досить часто повертав соціум у систему координат, що визначає людські взаємини, як у значенні вузько особистісному, так і у найширшому розумінні, такими, що відповідають кращим традиціям антропоцентризму та гуманності. Виникає питання: чому присутній такий феномен в певні історичні епохи? Відповідь лежить на поверхні.

Проблемам методики викладання взагалі та філософії і соціально-гуманітарних дисциплін зокрема, присвячені наукові пошуки як вітчизняних, так і зарубіжних вчених. Серед робіт, що досліджують загальні методи викладання навчальних дисциплін, варто відмітити наукові доробки В. Боброва [3], Л. Головка [4], П. Шевчука [8].

Метою представленої статті є аналіз методики викладання філософії у закладах вищої освіти.

2. Теоретичні основи дослідження

Філософія, як теоретична форма світогляду, і як раціональний спосіб мислення в своїй основі має запитальний характер, побудову поліваріантних відповідей, наявність когнітивних, етичних та естетичних інструментаріїв, що з необхідністю породжує рефлексію та в кінцевому рахунку повертає людство у вищезгадану систему координат. Споглядання сучасного історичного етапу свідчить, що саме зараз перед людством стоїть непросте питання про його майбутню долю. Діалектична боротьба постіндустріального минулого та інформаційного майбутнього, породила вищезазначену проблему [9]. Тому, саме філософія у вищезгаданому значенні повинна стати фундаментом подолання суперечності між минулим та майбутнім, а методика її викладання як навчальної дисципліни має сприяти формуванню нового типу, а скоріше типів мислення, що будуть відповідати викликам сьогодення [10]. Ми приймаємо думку американського дослідника М. Ліпмана, який визначає чотири типи мислення, що їх формує вивчення філософії: колективне – міркування з іншими; турботливе – міркування про інших; критичне – прийняття обґрунтованих рішень; креативне – створення нових ідей [19].

Вважаємо за необхідне зазначити, що основну канву представленої наукової публікації, становить опора на наш досвід викладання соціально-гуманітарних дисциплін взагалі та філософії зокрема у закладах вищої освіти різного спрямування.

На нашу думку, викладання вищезгаданих дисциплін повинно здійснюватися не лише на наукових засадах, що в свою чергу передбачає нівелювання усього людського зі сфери пізнання: смаків, емоцій, пристрастей, схильностей. Гуманітарна ж освіта має бути спрямована саме до людської душі, яку позитивна наука не визнає, її природа культуроцентрична, а не сайєнтиська. Можна вивчити природничі та точні науки, які є неупередженими, результатом такого вивчення буде формування певних конкретних компетентностей, але не можна в такому самому сенсі «вивчити» філософію чи то культурологію або політологію [13]. Це означає, що за своєю формою соціально-гуманітарне знання є відмінним, воно має на меті не просто засвоєння певної інформації, а формування культури та нової зрілої особистості. В такому контексті методи викладання соціально-гуманітарних дисциплін взагалі та філософії, зокрема, повинні певною мірою відзначатись

більш творчим (ігровим) началом [14]. У курсанта або студента немає готових рішень, як то при вивченні точних чи природничих наук, а результат отриманих знань та компетентностей є інтерсуб'єктивним за своєю природою, адже філософія у своїх фундаментальних принципах передбачає поліфонію різних, іноді дихотомічних точок зору. Відповідно кінцевий продукт такого засвоєння філософських та соціально-гуманітарних знань теж є інтерсуб'єктивним [18].

Отже, основною та фундаментальною формою у дидактичному конструкті вивчення соціально-гуманітарних дисциплін загалом і філософії зокрема є лекція, що зумовлено наявністю в ній важливих переваг порівняно з іншими формами навчання. Історичні розвідки пов'язані із вивченням походження та розвитком лекції, як форми навчання засвідчили, що майже на всіх етапах становлення й розвитку вищої освіти саме лекції належала провідна роль у навчальному процесі, хоча її місце змінювалося [20]. Провідна роль лекції у навчальному процесі зумовлюється передусім тим, що вона більшою мірою, ніж інші форми навчання, враховує психологічні та гносеологічні особливості процесу навчання і дає змогу реалізувати навчально-виховні цілі [11].

Слід зазначити, що лектор, під час викладання соціально-гуманітарних дисциплін є педагогічним фасилітатором не тільки під час проведення семінарів, але й під час лекції [7]. Ми маємо на увазі те, що лекція не повинна бути переказом матеріалу підручника та констатацією фактів і погоджуємося з думкою Кримського С. про те, що, викладання філософії – це не лише передання певних ідей або ознайомлення з результатами наукової творчості лектора, це водночас трансляція особистості, без якої ці ідеї сприймаються як нежиттєві» [16].

Методика підготовки та проведення лекцій є класичною та загальноновизнаною, що засвідчив і наш особистий досвід [1]. Отже, можна визначити такі основні вимогами яких повинен дотримуватись викладач під час підготовки до лекції:

- підбір, вивчення та узагальнення здобутків класиків філософської думки з досліджуваної проблеми;
- виділення головного і суттєвого, на що слід акцентувати увагу та під час лекції пропонувати занотувати;
- складання плану робочої лекції;
- вибір методу та стилю викладання конкретної лекції;
- створення мультимедійної презентації.

Визначені вище вимоги є загальними під час підготовки як до традиційних, так і нетрадиційних лекцій [2]. Крім того, будь-яка лекція має чітко визначену логічну структуру за своїм змістом, а саме:

- послідовність у викладенні проблеми, що заявлена у лекції;
- стислість та чітка визначеність гіпотез, що їх розглядає та висуває лектор;
- доказова та логічна переконливість лектора під час проведення зазначеного виду заняття;
- взаємозв'язок та взаємозумовленість окремих розділів лекції.

Запропонована структура також є традиційною та загальнопринятною. Слід застерегти молодих колег та особливо ретельно підійти до другого пункту цієї структури. Це пов'язано з тим, що викладач – гуманітарій завжди володіє «надлишком інформації» і в цьому контексті на початкових етапах викладацької діяльності, страждає надмірним зловживанням часу в процесі лекції на відволікання від «головного». Це в свою чергу стає причиною того, що не завжди лектор встигає викласти весь матеріал лекції.

Перед початком вибору виду лекції, слід пам'ятати, що коли викладач переважно розповідає «про філософію», а курсант або студент прослуховує дану розповідь, ознайомлюється з відповідною термінологією, занотовує її, то в такому випадку суть філософії лишається незрозумілою для слухачів. І цілком природно, каже М. Гайдеггер, що, на відміну від інших навчальних предметів, невідвідування занять із філософії може лишитися непомітним для студента, – як, рівнозначно, і сам по собі факт лише відвідування: ані відвідування занять з філософії, ані певною мірою навіть вправне оволодіння в процесі навчання філософською термінологією може бути лише, наголошує мислитель, фактом знання, а не актом філософування, цим «найістотнішим» виявом буття філософських знань [15, с. 327].

Отже, на нашу думку, традиційні лекції, що не несуть у собі «філософування» самого лектора, будуть не найкращим методом викладу матеріалу, найефективнішими у викладанні філософії та інших соціально-гуманітарних дисциплін є лекції есе. У педагогічній літературі з дидактики, останні досить часто відносять до нетрадиційних, ми можемо з цим погодитись, але у відношенні до інших дисциплін. Для викладання філософії, врят чи вони є саме нетрадиційними. Лекція есе дає змогу «вирватись» за межі шаблонності, як з погляду її змісту,

так і з огляду на прийоми викладу. Привільно побудована лекція есе є логічно побудованою, думка лектора є бездоганною з позицій формальної логіки (принаймні повинна бути такою), але залишає місце для альтернативи. Така лекція містить у собі всі переваги «сократівської бесіди». Слід зауважити, що викладач філософії завдяки мові не лише повідомляє щось іншому, а поглиблює розуміння і власної свідомості, світовідчуття [5].

В процесі лекції досить ефективним є влаштування так званої сесії «запитань-відповідей» за змістом прослуханого матеріалу. На нашу думку найбільш доречнішими є прості запитання на зразок: *«Ми обговорили одне із важливих питань... Що кому найбільше запам'яталося? Що було для Вас новим?»*. Подібні запитання дають змогу систематизувати прослуханий матеріал та у стислій формі відтворити.

Не зважаючи на зовнішній «консерватизм» філософії, не менш важливим чинником у методиці її викладання є використання мультимедійних презентацій, особливо під час проведення лекційних занять. Це чудовий сучасний засіб ефективного й результативного навчання: він надзвичайно розширює методичні можливості викладача, бо значно полегшує слухачам процес сприйняття нової інформації – а саме через найвищий рівень наочності. Останні розробки хмарного сервісу Prezi досить суттєво розширюють можливості створення ефективних нелінійних презентацій. Таким чином вирішується два завдання, перше з яких, відхід від лінійного мислення як такого, що руйнує пострадянське світорозуміння, друге створюються ефективні презентації, як супровід лекційних і не тільки занять. Загалом кажучи, переваги мультимедіа-презентації – це: «наочність і зручність». Головним алгоритмом створення навчальної презентації має бути принцип: «Простота, доступність і легкість сприйняття». Досить часто викладачі з невеликим досвідом використання мультимедійного супроводу, перенасичують світлина кольоровим різнобарв'ям, а іноді тезами, які являють собою простий текстовий матеріал. Інколи дехто занадто «роздрібнює» свій виклад на окремі слайди: доходить аж до того, що кожен слайд містить одне окреме речення. Означене призводить до того, що презентація перетворюється на швидку зміну багатьох десятків слайдів, а це відволікає увагу слухача і «збиває його з пантелику». Отже, викладаючи матеріал, не слід писати на слайді повного дослівного тексту, який Ви будете оголошувати. На слай-

дах слід викласти короткі ключові тези. Слід пам'ятати, що слухачі візуально дуже важко сприймають великий масив тексту: натомість слайд з 2–3-х ключових речень сприймається ефективніше і запам'ятовується краще. Слід робити не більше 5–7 рядків тексту на одному слайді. Отже, правильно оволодівши цим інструментом один раз, Ви вже ніколи не зможете обходитися без нього. Але це зовсім не означає, що слід відмовитись від дошки та крейди. Саме під час лекцій з філософії, коли необхідно занотувати ключові положення тієї чи іншої теми, крейда стане ефективним інструментом, що дозволить надати динамічності заняттю.

Не менш важливим елементом методики викладання суспільних дисциплін взагалі та філософії зокрема, є методика проведення семінарських занять. На наше глибоке переконання, саме проведення семінарських з філософії та інших соціально-гуманітарних дисциплін, повинно стати трансляцією власного досвіду рефлексивного мислення та спробою курсантів і студентів випробувати власні інтелектуальні здібності. Завданням викладача під час проведення семінарських занять, є формування у тих хто навчається стійкого усвідомлення мудрості як цінності. Саме семінарські заняття повинні стати майданчиком для передачі та пошуку не просто інформації, а смислів. Кожен з учасників семінарських занять повинен відчувати себе модератором, підняти якусь проблему, що стосується конкретної теми того чи іншого семінару. Найбільш ефективною моделлю для цього є сократівська бесіда, що дозволяє розвивати й оцінювати своє мислення в порівнянні з мисленням інших. Кожен відповідає на сократичні запитання з їх власних точок зору, відповідно таке обговорення неминуче постає багатовимірним [6].

Семінарське заняття має безпосередній зв'язок із самостійною роботою, яка є фактичним фундаментом для якісного семінару. Об'ємні філософські тексти, принаймні із хрестоматії, повинні бути опрацьовані саме під час самостійної роботи, на їх основі формується власне бачення кожним студентом чи курсантом певної філософської проблеми в різні історичні епохи. Семінарське заняття стає, в такому випадку, поєднанням навчальних і наукових засад у пізнавальній діяльності студентів та курсантів. У процесі підготовки до семінару, вивчення наукової літератури, її конспектування, реферування студенти та курсанти оволодівають науковим апаратом, набувають навич-

чок наукового дослідження. В процесі самого семінарського заняття курсанти та студенти отримують безцінну практику діалогу як методу дослідження, що посилює мислення і навички спілкування, спирається на різні точки зору та підкоряє індивідуальне мислення групі людей.

Під час проведення семінарських занять важливою є есеїстика, тут у пригоді стануть практикуми з філософії [12]. Написання власних есе студентами та курсантами це суб'єктивний, індивідуальний, самостійний простір, де формуються позиції, висловлюються думки, передбачення та демонструється відповідне індивідуалізоване ставлення. Тому головна місія та мета есе – це самостійне бачення студентом чи курсантом проблеми, питання, теми на підставі опрацьованого матеріалу та аргументів, у відповідності до обраного підходу, стилю. Відповідно в процесі написання есе у тих хто навчається формується інструментарій логіки та аргументів, необхідних для процесу критичного мислення.

Ми погоджуємося із думкою сучасного французького дослідником філософії Бреніфе О. про те, що методика викладання важлива, але не менш важливою є методологія мислення. В такому сенсі важливим є не стільки [17].

Отже, на нашу думку, філософія повинна стати більш практичною та поступово відходити від свого «консерватизму».

3. Методика дослідження

Вивчивши вітчизняний та зарубіжний досвід методики викладання філософії у закладах вищої освіти, нами зроблено вибір щодо її оптимізації, постійно здійснюється фіксація стану сформованості професійної компетентності майбутніх фахівців прикордонного відомства в процесі вивчення філософії. Зважаємо на те, що суб'єкти навчання, які проявляють обґрунтований оптимізм з приводу своїх потенційних успіхів, упевненість у своїй майбутній професійній діяльності, є вільними і відкритими у комунікативних позиціях, прагнуть працювати над власним самовдосконаленням, ставлять перед собою реалістичні цілі, досягають відповідних успіхів.

З метою підтвердження поданого вище, на початку першого курсу серед курсантів усіх спеціальностей були проведені *анкетування, опитування, індивідуальні бесіди*, використано зокрема *методику «незакінченої думки»*. Таким чином, вивчаючи сферу інтересів кур-

сантів-першокурсників, що може впливати на їх фахову підготовку та самореалізацію майбутнього фахівця, ми визначали завдання нашого експерименту щодо ефективності представленої методики викладання філософії у закладах вищої освіти.

4. Результати дослідження

В експериментальному дослідженні було охоплено 370 курсантів першого курсу усіх спеціальностей Національної академії Державної прикордонної служби України імені Богдана Хмельницького. Відповідно до логіки експерименту було сформовано контрольну групу 184 чоловіка та експериментальну – 186 чоловік.

Основними компонентами представленої авторської методики є проведення лекцій-есе з навчальної дисципліни «Філософія».

Результати опитувальника *«Визначення мотивації до пізнавальної діяльності у процесі проведення лекцій-есе з філософії»* в групах факультетів Національної академії Державної прикордонної служби України імені Богдана Хмельницького конкретизовано в діаграму *«Визначення мотивації до пізнавальної діяльності у процесі проведення лекцій-есе з філософії»*, де вказано відсоткові результати, які надають викладачеві інформацію щодо організації групової і індивідуальної роботи, безпосередньо спрямованої на результат як фахової підготовки, так і підвищення ефективності представленої методики викладання філософії. Мотивація нами обрана як ключовий критерій, оскільки вона відображає рівень інтересів та потреб суб'єктів навчання. Враховуючи вимоги до реалізації педагогічних експериментів нами виокремлено три рівні сформованості мотивації до пізнавальної діяльності: високий, середній, низький. Результати представлено на рисунку 1.

Як видно з рисунку 1, динаміка росту рівня мотивації до пізнавальної діяльності у процесі проведення лекцій-есе з філософії в ЕГ очевидна. КГ мала лише незначні зрушення.

5. Висновки з результатів дослідження

Отже, запропонована й застосована авторська методика викладання філософії дозволяє визначити рівні сформованості професійної компетентності майбутніх фахівців, дає широкі можливості для корек-

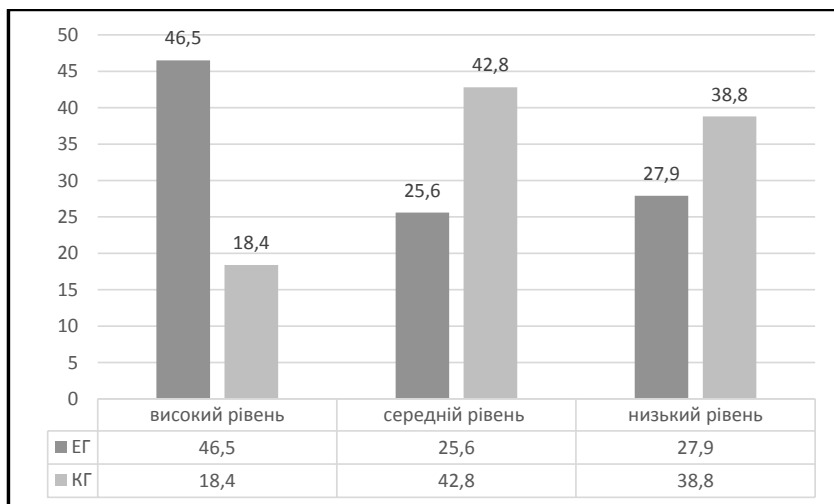


Рис. 1.

ції роботи з академічною групою та для індивідуальної роботи з окремими курсантами.

Зазначені у статті особливості методики викладання філософії у закладах вищої освіти є авторськими. Будь-яка методика може передбачати удосконалення та трансформацію. Таке питання може бути підґрунтям для подальших наукових розвідок у представленій проблемі.

6. Загальні висновки

Представлені особливості методики викладання філософії у закладах вищої освіти не є остаточними, оскільки сучасні суспільні науки являють собою гнучку систему соціальних, філософських, економічних, політологічних тощо знань, дослідницьких технологій, за допомогою яких вони охоплюють об'єктивну реальність, усі процеси та явища життя, а також його соціальні сфери.

Таким чином, методика викладання філософії вимагає постійного удосконалення свого інструментарію, актуалізації потреб у спеціальній методичній та навчальній літературі, врахування сучасних особливостей освітнього процесу тощо.

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**METHODOLOGICAL BASES OF VOCATIONAL EDUCATION
(AS EXEMPLIFIED BY TRAINING RAILWAY SPECIALISTS)**

Malaniuk Nataliia¹

Romanyshyna Ludmila²

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Abstract. The article outlines the methodological basis for the reform of higher professional education (as exemplified by training of railway specialists). The subject of the study is higher professional education. The purpose of the study is theoretical substantiation and practical implementation of methodological approaches to the construction of updated higher professional education, in accordance with the needs of modern society. Such methodological approaches as: competence, synergetic, acmeological have been described. The opportunities presented by each of the approaches considered for the improvement of higher professional education are revealed. The use of a competent approach to the system of higher vocational education provides a qualitative basis for the formation of a professional (competent) professional who has professional competence. The application of the ideas of the competence approach in higher professional education changes the purpose and the result of educational activity: from the accumulation of the amount of disparate knowledge, skills, skills for the formation of future specialists ability to creatively act in non-standard production situations, using the experience gained during the training period. The role of the teacher will also change: from the relay of knowledge of a skilled mentor and the organizer. The leading activity of the student is also changing: from the passive “listener” he becomes an active “researcher”. The competence approach in the system of higher vocational education performs the following functions: is a methodological one, prescribed in the Laws of Ukraine (“On Education”, “On Higher Education”, etc.); creates conditions for the approximation of the national education to the European one; called to change the educational paradigm to a one that meets the modern requirements of society;

¹ Candidate of Pedagogical Sciences, Lecturer of Mathematics, Kyiv College of Transport Infrastructure, Ukraine

² Doctor of Pedagogical Sciences, Professor, Head of the Department of Pedagogy, Khmelnytskyi Humanitarian-Pedagogical Academy, Ukraine

provides a reference point for education on the outcome. Education is not a constant (constant, unchanged), it is constantly evolving and undergoing change under the influence of external factors and its own laws of “evolution”. The theory of synergetics in education points out that humanity (society of knowledge) has to take care of its “preservation”, but also about perfection and development (self-improvement, self-development). Humanity without education (out of education) can not develop (to move from one state to another: from passivity to activity; from reproduction to creativity; from consumption to creativity). Implementation of the synergetic approach to higher professional education contributes to the improvement of the quality of education, since: it allows a new way to resolve the contradictions of today's pedagogical science, the key concepts of which are the following characteristics: constancy / variability, predictability / randomness, individual / collective, chaos / structuring, etc.; changes the educational vector for the unification of knowledge into the formation of a creative person; Provides new opportunities in the educational process (individual trajectories of development and self-development of all participants in the educational process); promotes the solution of didactic problems (compliance of the content of education with the requirements of time, selection of technological and methodological approaches, etc.). Acmeology, its central determinant, is the state of the person, in which it achieves the highest result in activity (and professional). Since the tasks of a modern vocational school are the formation of a specialist professional, therefore acmeological factors and factors should be taken into account in the educational process. Our studies have shown that, based on acmeology as a methodological basis, vocational education needs to form a clearly defined motivational component, since motivation is a driving force for success in any activity. The introduction of the acmeological approach in the system of higher vocational education will provide the following possibilities: modernization of higher professional education; development of the best qualities of each student, disclosure of his creative potential; improvement of the quality of higher professional education; formation of the image (prestige) of a specialty; formation of the image of the graduate (his self-realization, professional identity).

1. Introduction

The second decade of the twenty-first century was marked by global integration and transforming processes both in Ukraine and abroad. These pro-

cesses directly or indirectly relate to all spheres of human activity (including education). The European integration processes taking place in Ukraine put forward new requirements for the educational (professional) training of a young person. The key to today's specialist is not the availability of "paper-work" of his professional readiness (matching the chosen position), but the skills and experience gained during the learning process at various levels of continuing vocational education. The defining feature of the 21st century specialist is professional competence (professional identity, professional self-determination – I am the concept of a future specialist), which creates conditions for competitiveness in the world labour market (decent wages of satisfaction from work self-realization of satisfaction from life).

Thus, the problem of the inconsistency of higher education with the needs of each individual is acute. The need for reforming the system of higher education in general is urgent. In the context of our study, we will focus on the urgent need to reform the system of training a specialist in railway transport in the "College-University" system.

The aim of our study is to provide theoretical substantiation and experimental verification of methodological approaches to building upgraded higher professional education in accordance with the needs of modern society.

To implement the reform of higher education successfully, you need:

- to define the conceptual bases of the new higher school, which is designed to meet the modern needs of each person (student of college, university);

- construction of the newest educational models in the light of European integration processes and rapid scientific and technological progress;

- Implementation of the latest educational models in the practical activities of higher education institutions (systematic testing and improvement, a proactive function – forecasting the development of the industry for 10-50 years).

The modern system of education is characterized by "falling into extremes": taking one scientific approach is completely discarded by others. We believe that in order to build an effective model of the system of vocational education it is necessary to use the synthesis of the advantages of each scientific approach. Let's dwell on the following approaches: competence, synergetic, acmeological. We will analyze the advantages and opportunities of applying each approach to reforming higher professional

education, and also consider the problems that arise when implementing these approaches in the system of vocational education.

Competence approach

Competence approach in the system of education (higher education) came to replace the “know how” approach in the post-Soviet period, although it began to form in the 1960s. The reasons for the decline of the traditional (“knowledge”) approach:

- a large amount of scientific information that a person is physically unable to process or remember;
- variability of information;
- rapid pace of development of science and technology.

Researchers I. Burhun and T. Krystopchuk point out the external and internal factors that influenced the introduction of the competence approach in education in Ukraine, determining its relevance:

– external:

1. The rapid social, economic, political development of the world, which sets new requirements for graduates of higher education institutions (flexibility, mobility, creativity, responsibility, efficiency, etc.).

2. Ukraine's accession to the Bologna process (development of common standards for Ukraine and Europe based on the competence approach).

3. Global computerization (information filtering and searching).

– internal:

1. Change the phenomenon of “knowledge”.

2. Loss of need to overload memory [4; 11].

The competence approach as a methodological basis for the unity of purpose, content and quality of higher education has become the subject of research by such Ukrainian scholars as N. Bibik, O. Hulai, O. Dubaseniuk, O. Lokshyna, O. Ovcharuk, I. Malafiika, O. Pometun, L. Romanyshyna, S. Trubachova and others. Among the foreign scholars who contributed to the theory and practice of the competence approach are V. Baidenko, A. Bermus, I. Zimnia, M. Leiter, J. Raven, H. Selevko, V. Serikov, E. Toffler, A. Khutorskoi and others.

The scientist I. Zymnia [6] points out three key stages of the formation and development of the competence approach in education in general. So the first stage – 60-70-ies of the twentieth century was marked by the involvement in the scientific conceptual apparatus of the definition of “competence”, as well as contributed to the creation of a basis for distinguishing the concepts of

“competence” and “competence”. The second stage is the 70-90s of the twentieth century. was characterized by the active practical use of the definitions of “competence” and “competence” for the study of philologists (language, communication), as well as for the characterization of professional activities of specialists in the fields of management, management, management. The third stage – the 90s of the last century – and continues today, because “competence” and “competence” are prescribed in the basic laws “On Education”, “On Higher Education” as a goal and as a result of the educational activities of educational institutions of different levels of accreditation.

The need to apply the competence approach in education is a response to today's demands – a change in the educational paradigm that should meet the demands of all participants in the educational process and the labour market, taking into account the globalization and integration of world and European trends of the present. The main task of this approach is to develop the ability of students to actively apply successful theoretical and practical experience in their professional activities, possessing not just theoretical knowledge, but their ability to apply them in a variety of industrial situations. The problem of the competence approach in the light of higher education is a specific interpretation: it is not just a system that allows a fairly objective assessment of the suitability of each individual graduate for future activities, as well as to develop clear criteria for assessing this quality, allowing future employees to carry out targeted training for obtaining required certificate and recognition in this area [3].

The scientist O. Zhuk [5] defined the following functions of the competence approach in education:

- operational – identification of the system of knowledge, skills and abilities, various activities of the student, which will be crucial for the formation of his competence and will contribute to the effective resolution of professional, personal and social tasks;

- activity-technological – ensuring the construction of the content of training, as close as possible to the future scope of the contender, the development and implementation of tasks in the educational process, methods of solving which correspond to the technologies of vocational education;

- educational – strengthening of the educational component of the educational process, the acquisition of experience by students (organizational, management, etc.), the formation of a culture of personal and professional communication;

– diagnostic – development of a more effective system for monitoring the quality of educational and professional process, including diagnostics of the achieved levels of formation of competence (and competencies).

The researcher H. Selevko [20, p. 138-143] notes that the competence approach implies a gradual reorientation of the leading educational paradigm with a dominant translation of knowledge and the formation of skills in such a way that it will help create the conditions for acquiring a system of competencies that will guarantee the potential, ability graduate to survival and active professional activity in the modern conditions of multifactorial socio-political, market-economic, informational and communication life space.

Key definitions of the competence approach are “competency” and “competence”. Scientists are still unanimous in the interpretation of these concepts and relations between them. For example, the European Centre for the Development of Vocational Education (CEDEFOP) expresses the following considerations regarding this issue: “There is such confusion and sharp discussion of the concept of” competency / competence “that it is impossible to identify or assign to someone a consistent theory or to reach a definition that is capable of adapting and reconciling all different ways to use the term. This terminological confusion often reflects the mixing of various concepts and the inconsistent use of terms” [25, p. 53].

We share A. Khutorskoi’s opinion of concerning the relation between the concepts of “competency” / “competence”: competency – a set of interdependent qualities of the individual (knowledge, skills, skills, methods of action), which are asked in relation to a certain range of subjects and processes and necessary to act qualitatively and productively. in relation to them; competence – the possession of a person with a set of relevant competences, including its personal attitude to them and the subject of activity [23, p. 58-64.]. The author believes that the competence – alienated, the social requirement (norm) for the education of the person who is studying is necessary for his qualitative productive activity in a certain field, and competence is an individual-psychological feature, mastery, possession of the relevant competence, which contains the personal attitude of the student (student) to her and the subject of activity [24].

Scientist Y. Stelmakh, the follower of the ideas of L. Millrud, is convinced that “competence can be regarded as a complex of competencies that are determined by a set of interrelated qualities of personality, necessary for

productive productive activity in relation to a certain range of objects and processes” [21, p. 4].

Scientist J. Raven thinks that competence is a certain specific ability of a person, which is necessary for effective (qualitative) performance of a certain type of activity in a particular sphere of human life. The author also points out that the above described ability already involves the presence of a person (student, college graduate) general and narrow special knowledge, specific subject skills, ways of thinking, responsibility for their actions [18, p. 6].

The introduction of a competent approach to the system of education (higher education) changes the purpose and the result of educational activities: from the accumulation of the amount of disparate knowledge, skills, skills for the formation of future specialists the ability to creatively act in non-standard production situations, using the experience gained during the training period. The role of the teacher is also changing: from the relay of knowledge of a skilful mentor and the organizer. The leading activity of the student is also changing: from the passive “listener” he becomes an active “researcher”.

We agree with the opinions of most scholars on the problem of modern higher education – not to equip the graduate with the amount of professional knowledge, but to prepare a specialist who can apply the acquired knowledge in practical activities, who understands his place and role in a society capable of learning in accordance with the new requirements of professional activity, to take independently make production decisions and be responsible for them [19]. The basis for these tasks is the competence approach in education, which today plays a leading role in the methodology of education, since it enables the education to meet the demands of modern society in the context of European integration processes, knowledge mobility and the labor market.

According to O. Hodan [22, p. 233], “the general idea of competence is the competence-oriented education, which aims at the complex acquisition of knowledge and methods of practical activity, through which a person successfully implements himself in various fields of his life.”

Implementation of the competence approach in the system of higher education (in particular, professional) provides a qualitative basis for the formation of a professional (competent) professional who has professional competence. Scientist L. Elahina [7, p. 23] emphasizes that it is the com-

petence approach that allows “to select the content of vocational education in accordance with the needs of the individual and at the same time orient it to successful innovative experience in the professional activity in each particular field”.

At the same time, there are a number of problems associated with the application of the competence approach in the system of higher vocational education:

1. Students' unpreparedness for independent work (experience of school education, often rural, is reduced to explanatory, illustrative, relaying).
2. The reluctance of teachers to change methods and approaches to work with students (work 10 years ago, 20 years ago, etc.).
3. Lack of proper material and technical support of the educational institution.
4. Inadequate connection between different levels of continuing education in the “college-university” system.
5. Low level of cooperation between institutions of vocational education and production (practice, further employment of graduates).
6. Lack of building an image, prestige of specialties.

You can solve these problems as follows:

1. Formation of the motivational component of the activity of students of freshmen, the culture of educational activity, independence.
2. Realistic training courses for teachers (seminars, trainings, master classes).
3. Cooperation of educational institutions.
4. Harmonization of curricula and programs of institutions of different levels of accreditation.
5. The interest of employers in professional staff, subsidies from the state for training and placement of graduates without work experience.
6. At the state level, as well as in educational institutions, creating an image, prestige of specialties (from the first days of college education).

Implementation of the competence approach in education as a basis for the modernization of education in general is designed to solve the following tasks:

- updating the standards of higher education (education programmes in accordance with accepted in European countries);
- construction of a model of a graduate of a new generation (having a professional competence);

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– construction of a holistic system of continuous vocational education that meets the contemporary demands of society.

Conclusions:

1. The competence approach in today's education is methodological, since it is prescribed in the Laws of Ukraine (“On Education”, “On Higher Education”, etc.).

2. The competence approach in vocational education creates conditions for the approximation of the national education to the European one.

3. The competence approach is intended to change the educational paradigm to one that meets the contemporary challenges of society.

4. The competence approach provides a reference point for education on the result.

2. Synergistic approach

The second decade of the 21st century is marked by the constant creative search for methodological approaches in education that could describe individual processes and phenomena that are of interest to both theoretical researchers and practitioners, whose purpose is to improve and improve existing educational processes, and who can build and explore strategies for their development.

Continuous vocational education in modern conditions does not correspond to public inquiries, since in the time of rapid economic changes it remains sedentary with little pronounced dynamism. Rapid scientific and technological progress, global eurointegration processes place essentially new demands on specialists (educators). There are constant creative searches of scholars, teachers, psychologists, philosophers, whose goal is to improve the existing system of continuing vocational education and bring it to a qualitatively different level – compliance with the requirements of “space and time”. To this end, methods and definitions of other sciences are borrowed and introduced into the pedagogical science, in order to thoroughly analyze and predict the strategies for the development of education in general (and professional education in particular), to characterize educational phenomena from different perspectives. In particular, synergetics is an interdisciplinary methodology, designed to give “new breath” to pedagogical science.

Opportunities of synergetics as “polydisciplinary” and “transdisciplinary” science are highlighted in the writings of O. Kniازهva and S. Kurdi-

umov. The questions of synergetics in education are devoted to research by V. Kremen, V. Iliin, G. Malinetskyi, E. Moren and others.

Synergetics today provides additional “opportunities” for various sciences, including, for pedagogy: tools for analyzing the complex behavior of man and society; promotes understanding of the relatively simple principles of organization and self-organization of extremely complex entities (systems); description with the help of parameters of order or asymptotic picture of evolutionary processes [9, p. 55].

Education is not a constant (constant, unchanged), it is constantly evolving and undergoing change under the influence of external factors and its own laws of “evolution”. Education is a “pedagogical system, in the center of which Man is a plurality of people; the way of functioning of this system-pedagogical activity” [16, p.13]. The theory of synergetics in education points out that humanity (society of knowledge) has to take care of its “preservation”, but also about perfection and development (self-improvement, self-development). Humanity without education (out of education) can not develop (to move from one state to another: from passivity to activity; from reproduction to creativity; from consumption to creativity).

According to the synergetic approach, everything that happens in the world (phenomena, processes) is unpredictable, random, chaotic. The same applies to education. It, as a “nonlinear system”, develops not clearly defined path (instability), but each time finds (randomly) one of many existing ones. Academician V. Kremen emphasizes that “the feature of the integrity of the essence of the educational process is continuous evolution, or self-development on the principles of self-organization” [10, p. 72].

In education (and pedagogical science), at the level of the world community, a large number of materials have been developed and collected, and not all of them can be described with the help of purely humanitarian sciences (pedagogy – humanitarian science). Therefore, scientists every time resort to active searches for the application of interdisciplinary and transdisciplinary methodologies. “The interdisciplinary and transdisciplinary nature of synergetics is manifested in the holistic-networked way of structuring reality. This approach was the result of an integration trend aimed at “erasing” the faces between individual sciences, their specialization in problems, and not subjects” [10, p. 127].

The synergetic paradigm, including the entire experience of natural sciences, mathematics and social sciences, is designed to form a creative per-

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sonality from each subject of the education system, which freely determines the scope of his activity, actively interacts with the world, thus responding to the needs of a modern man, a modern culture.

The peculiarities of culture at the present stage that influence the formation of a “picture of the world” inevitably provoke a situation where, so-called, the traditional system of education does not meet the demands of society. Information technologies that through all permeate all spheres of human activity, form in each individual a new type of thinking (creative), new activity (creative). Today's culture is characterized by contradictions: on the one hand, it is homogeneous (within the ethnic group, the people, etc.), on the other – heterogeneous (multicultural, multicultural). This fact leads to the fact that various subjects put forward different educational requirements. The notion of a single pedagogical practice is leveled off. Instead, a new format of certain freedom of educational choice arises, diametrically opposed pedagogical practices arise.

Conceptual apparatus of pedagogy is ambiguous: different authors interpret the same definitions in different ways. Therefore, there is a need to conduct scientific and pedagogical research in the light of synergetics.

In the past, the picture of the world was constant (relatively unchanged), it served as the basis for building and perceiving objective reality by all members of society. Rapid scientific and technological progress has violated this “stability” of the world picture. Today, possessing a number of knowledge, there is no guarantee that they will all be needed tomorrow. Man must prepare for the variability of the surrounding reality (in all spheres of life), respond promptly and “adapt” to new challenges of time. Therefore, the key task of synergy in pedagogy, which has its basic characteristics of variability, procedurality, movement, development, giving answers (indications) to the contemporary world community's requests, helps to bring education closer to a state in which it can answer as much as possible today's demands.

During the educational process, the process of producing new knowledge from the system of available knowledge takes place, therefore, through the prism of synergetics, the main task of pedagogy (education) is to “create conditions for obtaining synergies that would ensure the acquisition of new knowledge” (“synergy” – the aggregate interaction of several factors, the result of which is greater than that which can be obtained with the sum of individual components”) [10, p. 170].

Pedagogy today is characterized by a rejection of authoritarianism, the personality of the student (student), the development of his individual abilities (creative abilities) and satisfaction of his social queries are placed on the foreground. The synergetic concept is intended to contribute to the construction of a single picture of the world, but this process is infinitely continuing. "Education of the third millennium from a holistic, unified picture of the world selects individual fragments that make up various educational disciplines. Therefore, often students (as well as students) do not have a holistic formation of the picture of the world, their knowledge is fragmented, there is no ability to construct logical, clear causal relationships" [13]. If we consider the pedagogical system through the prism of synergetics, then its key characteristic will be non-linearity (variedmonity, multi-facetedness). The principle of non-linearity of the development of the pedagogical system for all objects of this system is realized in different ways. The pedagogical system is an open system characterized by an unstable state, a dynamics of development, with diverse elements in significance (importance). In the past, the state of so-called equilibrium was considered to be ideal. Any other unstable state was considered negative. Today there is a completely different vision of instability: instability is considered a necessary and sufficient condition for the development of the system (and pedagogical). According to O. Kniازهva and S. Kurdiymov [8, p. 54], "only systems that are far from stability, systems in states of non-equilibrium, can spontaneously organize and develop". We are talking about processes of self-development and self-organization of systems. We support the opinions of scientists O. Kniازهva and S. Kurdiymov, because we believe that the stability of the educational system leads to its decline. The variability of external conditions (rapid development of science and technology, mobility of the labor market) are the driving force for the educational system (the system of continuous professional education in particular). If the educational system does not endeavor to meet the demands of the society and the challenges of the present, it will lose its urgency and demand. Since the determinant in the synergetic theory belongs to the "attractor" (which is close to the definition of the "goal"), such an "attractor" in any pedagogical system is the goal of education [10, p. 185].

Didactic aspects of adaptation of synergetics to the content of education (at all levels) are first realized through the correspondence of the content of

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teaching with the requirements of modern society. This means that in the foreground there should be a person (student / student-graduate-specialist), and the educational process in the system of continuous education should contribute to the development of the best qualities, the formation of professionalism, responding to the challenges that today puts the society in a rapidly scientific -technical and informational and economic development, mobility of labor resources and their fierce competition.

We will analyse the system of preparation of future specialists of railway transport through the prism of the synergetic approach in the conditions of continuous professional education. The described system is a pedagogical system, and, therefore, open and non-linear and one that self-organizing to mechanisms of self-organization include the separation of parameters of order, methods of their description, corresponding to a certain model) [10, p. 193]. The educational process of training trainers of railway transport on the conceptual principles of the synergetic approach allows, under certain conditions (pedagogical), to determine qualitatively successful combinations that can serve as parameters of the order or mechanisms for the search of these parameters [14, p. 339]. Today, within the pedagogical systems, there are a number of methodologies. The principle of openness of the system allows self-organization (self-development) of the system by different methodologies, when they organically complement each other, reveal pedagogical problems from “different angles”. The principle of nonlinearity of the system determines the transforming processes in the system for the purpose of improvement, improvement (self-organization, self-development). Such a system is characterized by multiple variability, since there is a variety of conditions in the educational environment (space), which gives each participant a system of special opportunities for achieving his own success, ensuring the development of creative potential, and promoting his autonomy in decision-making [13].

Implementation of the educational process of training future specialists of railway transport in conditions of continuous education of the synergetic approach gives new opportunities:

- the trajectory of personal development of all participants in the educational process (students and teachers);
- development (self-development) of all potential abilities of each student – the future specialist;

- formation of creative (creative) thinking;
- continuing education as a basis for “life-long learning” (self-education) [13].

We characterize the “attractor” of the system of training railway transport specialists in conditions of continuous education. The training of a competitive railway specialist in conditions of continuing vocational education, which has professional competence, is the “attractor” of the described system.

Conclusions:

1. Synergetics allows a new way to solve the contradictions of today's pedagogical science, key concepts of which are such characteristics: constancy / variability, predictability / randomness, individual / collective, chaos / structuring, etc.

2. Synergetics changes the educational vector of unification of knowledge into the formation of a creative person.

3. Synergetics provides new opportunities in the educational process (individual trajectories of development and self-development of all participants in the educational process).

4. Synergetics contributes to the solution of didactic problems (compliance of the content of education with the requirements of time, the selection of technological and methodological approaches, etc.).

3. Acmeological approach

Achievement of high professionalism – the ultimate goal of professional development of a specialist. And for its realization it is necessary to carry out educational and self-education measures (education through all life). In the light of the implementation of this socio-cultural vocation personality is important acmeology – the science of the laws of professional development in the context of the implementation of any activity at the highest professional level. Acme – (Greek – ακμή) – the highest point, the summit – “somatic, physiological, psychological and social status of the individual, characterized by the maturity of its development, the achievement of the highest performance in activity, creativity” [2, p. 15].

“Akmeologiya – the science of the laws, conditions, factors and incentives that promote or impede the self-realization of the creative potential of mature people in the process of self-movement to the heights of professionalism and productivity and productivity of creative activity, embodied in

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socially significant products of culture, art, literature, science, technology, education, as well as in the man himself” [12, p. 12].

It is qualitative education (and self-education) is a necessary and sufficient condition for productive creative activity, on the basis of which will be formed those personality traits that will ensure the performance of future professional activities.

The period of maturity begins with an independent choice of future profession (social maturity) [12, p. 15]. Thus, vocational education in the system “college-university” is intended to promote the development of professional qualities of students – future professionals.

Education at a college (university) is significantly different from studying in a general education institution: firstly, organizational forms (lesson – a couple, etc.); and secondly, the status of the subject of learning (the child is a mature person). Therefore, when organizing the activities of universities of different levels of accreditation, the acmeological approach should be taken into account.

Acmeology, due to its central determinant, is the state of the person, in which he achieves the highest result in activity (and professional). The formation of this science (as well as the appearance of the term) took place in the 20-30's of the twentieth century. The ideological basis of acmeology as a science is the works of F. Galton, V. Osvald, I. Pern.

The scientist N. Kuzmin distinguishes five periods in the development of acmeology:

1. Latent – the laying of historical, cultural, social, philosophical, scientific, practical, pedagogical prerequisites of isolation from the scientific knowledge of the sphere of knowledge about man.

2. Nomination – 1928 – the introduction of the term “acmeology”.

3. Incubation – the typology of acmeology is built.

4. Organizational and methodological – the development of acmeological theory itself.

5. The beginning of the XXI century – the implementation of the philosophical substantiation of the subject of acmeology, its connection with other sciences [1, p. 44-45].

In the current conditions of Ukraine's integration into the European economic space, when the requirements for staffing and resource provision of various sectors of the national economy are increasing, the acmeological concepts of professional development become more and more relevant. So

the scientist O. Dubasenyuk emphasizes that “acmeology carries out integrated researches of processes and methods of implementation by various specialists of professional activity, synthesizing for this achievement of other sciences about a person, first of all, philosophy, sociology, psychology, physiology, genetics and pedagogy [17, p. 15]. The author believes that only by applying acmeological technologies in the educational process, it is possible to form a highly professional specialist. Under acmeological technologies O. Dubaseniuk understands “the systematic way of organizing the process of development of a mature person, disclosing its creative potential, a gradual trajectory of achieving the vertices of professionalism” [17, p. 110].

Scientist T. Shanskova to the basic concepts of acmeology includes acmeological conditions and acmeological factors. Acmeological conditions are “significant circumstances on which the achievement of a high level of progressive development of a mature person and especially its professionalism” [17, p. 123] depends. According to T. Shanskova, the most important acmeological factors are the desire for self-realization, high personal standards, a high level of professional perception and thinking. The author believes that acmeological factors are the driving force and the main determinants of the process of becoming a professional.

Consider the system of training a future specialist in railway transport from the point of view of the acmeological approach. Since the tasks of a modern vocational school are the formation of a professional specialist, therefore acmeological factors and factors should be taken into account in the educational process. With the beginning of studies at college (university), the social role of the young person, influencing her world perception, changes, becomes the basis of her life position. College teachers need to be prepared to help freshmen students master their new status, overcome the psychological barrier student-student, learn to make decisions themselves and bear responsibility for them, as well as a culture of learning activities (including self-help). To do this, it is advisable to use innovative and interactive teaching methods in the educational work (this applies not only to the freshmen). These methods will help students learn to express their opinions, substantiate their position, conduct a scientific discussion, and also experience the various roles associated with future professional activities. In order to achieve a high level of professionalism, the student must learn to set learning goals and achieve high academic results.

Based on acmeology as a methodological basis, vocational education requires the formation of a well-defined motivational component, since motivation is the driving force for success in any activity. The image of the profession remains an important component of the motivation to engage in educational activities (and then professional ones). According to L. Danylchuk [15, p. 183], “the image represents a complex phenomenon of the present, which combines quite heterogeneous factors: historical, political, economic, social, personal, etc.” We believe that all of the above factors should be taken into account in the process of research and the formation of the image (prestige) of a specialty. It is the image of the specialty, the desire to win the dream profession, to become the best in future professional activities – the driving force in achieving the acmeological goal of education – the formation of a specialist capable of achieving a high level of professionalism. Transformation processes taking place in Ukraine help to increase the image of specialists in transport specialties (in particular, railway transport). This is a visa-free regime between Ukraine and European countries, the entry of Ukraine into the European educational space, mobility of the labour market, high competition among specialists of various specialties, etc. Among the transport specialties, the most popular in recent years is the use of 275 Transport Technology (on the railway transport), which trains specialists in the field of transportation, logistics.

Conclusions:

To be able to compete in the global labor market, a specialist must become a professional in his business. This applies to all branches of the national economy. And this will be possible, given the acmeological approach when constructing a higher professional school.

Thus, the use of the ideas of the acmeological approach in vocational education will contribute to:

1. Modernization of higher professional education.
2. Development of the best qualities of each student, disclosure of his creative potential.
3. Improving the quality of higher professional education.
4. Formation of the image (prestige) of a specialty.
5. Formation of the image of the graduate (his self-realization, professional identity).

4. General conclusions

1. Higher vocational education of the present must meet the demands of society, respond to all time requirements and challenges. To this end, the reform of higher professional education should be implemented; methodological approaches are the basis for its implementation (in our study – competence, synergetic, acmeological).

2. In order to achieve better results in building a new higher vocational school, it is advisable to use the synthesis of the benefits of different approaches.

3. The competence approach in the system of higher vocational education performs the following functions: it is methodological, since it is prescribed in the Laws of Ukraine (“On Education”, “On Higher Education”, etc.); creates conditions for the approximation of the national education to the European one; designed to change the educational paradigm to one that meets the contemporary challenges of society; provides a reference point for education on the outcome.

4. Implementation of the synergetic approach to higher professional education: allows a new solution to the contradictions of today's pedagogical science, the key concepts of which are the following characteristics: constancy / variability, predictability / randomness, individual / collective, chaos / structuring, etc.; changes the educational vector for the unification of knowledge into the formation of a creative person; Provides new opportunities in the educational process (individual trajectories of development and self-development of all participants in the educational process); promotes the solution of didactic problems (compliance of the content of education with the requirements of time, selection of technological and methodological approaches, etc.).

5. Implementation of the acmeological approach in the system of higher vocational education will provide the following possibilities: modernization of higher professional education; development of the best qualities of each student, disclosure of his creative potential; improvement of the quality of higher professional education; formation of the image (prestige) of a specialty; formation of the image of the graduate (his self-realization, professional identity).

6. Our further research will be aimed at creating (constructing) a model of a modern graduate – a future specialist in the field of railway transport, competitive in the labour market, able to realize their best qualities and achieve a high level of professionalism.

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**MODERN EUROPEAN REQUIREMENTS
FOR EDUCATIONAL PROGRAMS
IN HIGHER EDUCATIONAL INSTITUTIONS OF UKRAINE**

Pochuieva Olha¹

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Abstract. The article analyzes the requirements, mechanisms of development and implementation of educational programs determined by the current legislation. Stages of education are considered in Ukraine as well as requirements for educational programs. European and National qualifications frameworks were characterized on the assumption of the distinguished degrees of education and the comparison of its descriptors was conducted. A generalization of each stage was made on the grounds of algorithm of higher education standards. European Standards (ESG) and recommendations for the educational programs development were analyzed. Key profile positions of degree programs of instructional guidelines for TUNING project were reviewed. The obtained results of the European projects analysis on account of the improvement of the higher educational system (ESG), the development and update of educational programs (TUNING), the harmonization of educational programs and qualifications frameworks (ALIGN) facilitate the integration of Ukraine higher education into the European space through the implementation the conditions and policies of the Bologna process. The results of generalizations and developments may be aimed at developing and improving indicators of domestic quality assurance of higher education.

1. Introduction

Integration of Ukraine higher education into the European space through the implementation the conditions and policies of the Bologna process; quality assurance of higher education and science by virtue of the

¹ Candidate of Pedagogical Sciences,
Chief specialist of the Department of Education Quality Assurance and Innovation Development,
Lecturer of the Department of Foreign Languages,
Simon Kuznets Kharkiv National University of Economics, Ukraine
ORCID: <http://orcid.org/0000-0001-6954-5197>

independent system development of higher education quality assurance; integration of education, science and innovation; autonomy of higher educational institutions; cooperation of higher educational institutions and business in the field of higher education and science through the introduction of mechanisms for innovation development of the country by means of the interaction of education, science, business and the state – all of it determines the conceptual framework for the modernization of higher education. The Law of Ukraine “On Higher Education” (2014) grants the autonomy for higher educational institutions and promotes the development of the education content; provision of educational services quality; the competitiveness of graduates in the labor market. The autonomy of the higher educational institution is defined in the mentioned Law as the independence, self-sufficiency and responsibility of the higher educational institution in making decisions on the academic freedoms development, the organization of educational process, scientific research, internal management, economic and other activities, recruitment and deployment of personnel [4]. In this context, higher educational institutions should be able to develop educational programs for the training of specialists.

The educational program is defined as an concerted body of educational activities, whose development and implementation should be based on a competency building approach taking into account the current regulatory framework, namely the Laws of Ukraine “On Education” (2017), “On Higher Education” (2014), the Resolutions of the Cabinet of Ministers of Ukraine “On Approval of Licensing Conditions for Educational Activities of Educational Institutions” (2015), “On Approval of the National Qualifications Framework” (2011), “Methodological Recommendations of the MESU on the Development of Higher Education Standards” (2016). It should meet the standards and recommendations adopted by the Ministerial Conference in Yerevan “Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)” (2015), the results of the European Commission's Project “Tuning Educational Structures in Europe” reflected in “Guidelines and Reference Points for the Design and Delivery of Degree Programmes” including programs of competencies and training outcome (Tuning Educational Structures in Europe, TUNING, 2016), the TEMPUS international project of the European Union “ALIGN: Achieving and Checking the Alignment between Academic Programmes and Qualification Frameworks” (2017), the results of which are represented in

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the “National Guidelines for the Harmonization of Academic Programmes and Qualifications Frameworks”.

S. Kalashnikova, T. Lukina, Y. Rashkevych considered the question of the quality assurance problem in the works of; I. Zolotorova, V. Kovtunets, S. Kalashnikov, S. Kurbatov, I. Lynova, I. Prokhor examined evaluation of the quality of educational programs and foreign experience in the works; S. Kalashnikova, S. Kurbatova, I. Prokhor, I. Sikorska dedicated their works to the mechanisms providing and improving the quality of higher education; Y. Rashkevych, O. Sharov presented the system of external evaluation of higher education quality; V. Zakharchenko, V. Lugovyi, Y. Rashkevych, and J. Talanova evaluated the issues of monitoring and improving the educational program in their works.

2. Research methodology

We used the following research methods in order to study the normative legal framework of Ukraine and generalize the main European requirements regarding the content of educational programs: analysis, synthesis, generalizing.

3. Discussion

Accession of Ukraine to the Bologna process, integration into the European higher education area and adoption of the new Laws of Ukraine “On Education” and “On Higher Education” allot topical tasks on higher educational institutions above all to build up and implement educational programs on grounds of the competence approach.

According to the Law of Ukraine “On Higher Education” (Article 5), the training of specialists with higher education is carried out in conformance with the relevant educational and professional, educational and scientific and scientific programs at the following levels of higher education: the initial level (short cycle) of higher education; the first (bachelor's) level; the second (master's) level; the third (educational and scientific) level; scientific level.

Acquaintance of higher education at each level of higher education involves the successful completion of a relevant educational (educational and professional or educational and scientific) or scientific program by an individual, which is the basis for awarding the corresponding degree of higher education: Junior Bachelor; Bachelor; Master; Doctor of Philosophy/ Doctor of Arts; Doctor habil. [4].

Table 1 vividly represents a comparison of levels, degrees and educational programs of the higher education system.

Table 1

Levels, Education Degrees and Education Programs of the Higher Education System of Ukraine

Level of education	Degree of education	Educational program
Initial	Junior Bachelor	educational and professional
First	Bachelor	educational and professional
Second	Master	educational and professional
		educational and scientific
Third	Doctor of Philosophy (PhD) (first academic degree)	educational and scientific
Scientific	Doctor habil. (second academic degree)	

Analyzing the data of Table 1 it can be stated that appropriate educational and professional or educational and scientific programs should be developed for each degree at all levels of higher education.

Let's take a closer look at the degree of education and the requirements for educational programs defined in Article 7 of the Law of Ukraine "On Higher Education" [4].

Junior Bachelor is educational and professional degree acquired at the initial level (short cycle) of higher education and awarded by the higher educational institution as a result of the successful fulfilment of an educational and professional program by the applicant for higher education, which volume is 120-150 ECTS credits. The volume of the educational and professional program is determined for obtaining the degree of a junior bachelor on the basis of a Junior Specialist degree by the institution of education.

Bachelor is an educational degree obtained at the first level of higher education and awarded by a higher educational institution as a result of the successful fulfilment of fulfilment of an educational and professional program by the applicant for higher education, which volume is 180-240 ECTS credits. The volume of the educational and professional program is determined for obtaining the degree of a Bachelor on the basis of a Junior Bachelor or Junior Specialist degree by the institution of higher education.

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Master is an educational degree acquired at the second level of higher education and awarded by a higher educational institution (scientific establishment) as a result of successful fulfilment of a relevant program by the applicant for higher education. A master's degree is obtained through an educational and professional or an educational and scientific program. The volume of the educational and professional program of the master's degree training includes 90-120 ECTS credits, the volume of educational and scientific program is 120 ECTS credits. The master's educational and scientific program indispensably includes a research (scientific) component of at least 30 percent.

Doctor of Philosophy is an educational and, at the same time, the first scientific degree and a degree obtained at the third level of higher education on the basis of a master's degree. Specialized academic council awards the degree of Doctor of Philosophy at a higher educational institution or a research institution as a result of successful fulfilment of relevant educational and scientific program and public defense of a thesis in a specialized academic council by an applicant for higher education. The normative training period is four years for the Doctor of Philosophy at the postgraduate study (adjuncture). The volume of the educational component of the educational and scientific program includes 30-60 ECTS credits for the training of the Doctor of Philosophy.

Doctor habil. is the second scientific degree obtained by an individual at the scientific level of higher education on the basis of the degree of the Doctor of Philosophy and involves the acquisition of the highest competencies in the field. Educational component is not required for this degree of education in accordance with the current legislation.

Proceeding from given the degrees of education, the mechanisms harmonizing educational programs with the European and National Qualifications Frameworks are urgent. The outlined issue is relevant, since the level of qualification to be awarded should be determined during the development of an educational program of the HEI, which grounds on the basis of the current legislation and the existing European Qualifications Frameworks. Let's analyze in more detail this issue relying on the researches by V. Zakharchenko, Y. Rashkevych, J. Talanova [3].

Today two basic qualifications frameworks are developed and used in Europe. The Framework of Qualifications for the European Higher Education Area (QF EHEA) and The European Qualifications Framework for lifelong learning (EQF LLL).

The given qualification frameworks are compatible, since levels 6, 7 and 8 of the EQF LLL correspond to the three cycles of the QF EHEA, which provides the possibility of developing short-cycle educational programs (corresponding to the level 5 of the EQF LLL) in the national qualifications frameworks within the first cycle (bachelor's studies).

The Framework of Qualifications for the European Higher Education Area (QF for the EHEA) was adopted at the European Ministerial Conference on education in 2005 [6; 7; 12].

QF for the EHEA are the structures that describe the qualifications of higher education of countries participating in the Bologna Process. This qualification framework is designed for higher educational institutions/institutions of higher education in Europe. It characterizes three consecutive higher education cycles, as well as a short cycle [3]:

- the short – 90-120 credits;
- the first (Bachelor's) – 180-240 credits;
- the second (Master's) – 90-120 credits;
- third (Doctoral) – 30-60 credits.

The QF for the EHEA is based on Dublin descriptors.

The Dublin descriptors describe in short form the typical expected accomplishments and abilities associated with the qualifications relating to the termination of each higher education Bologna cycles. It does not partake a regulatory nature, does not represent a threshold or minimum requirements, it is not exhaustive; it can be replaced and analogous or equivalent characteristics can be added. The descriptors are aimed at determination the character of the integral qualification [1]:

Dublin descriptors of fundamental general competencies:

1. Knowledge and understanding.
2. Applying knowledge and understanding.
3. Making judgements.
4. Communication.
5. Learning skills.

On the basis of these descriptors, it is possible to classify educational programs according to the levels of qualification, compare it against each other and acknowledge documents on higher education.

The European Qualifications Framework for lifelong learning (EQF for LLL) was adopted by the European Parliament and the Council of the European Union in 2008 [3; 6; 7; 13].

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EQF for LLL is a general system description of eight (1-8) qualification levels covering the full range of qualifications obtained through formal, non-formal, informal learning, in particular general secondary, vocational and higher education. The descriptors of the qualification levels of the EQF LLL are following:

- knowledge (theoretical and/or factual);
- skills (cognitive and practical);
- competences (autonomy and responsibility).

The National Framework of Qualifications (NQF) was approved in Ukraine by the Resolution of the Cabinet of Ministers of Ukraine dated November 23, 2011 No. 1341 “On Approval of the National Qualifications Framework” [10]. The structure contains a description of ten qualification levels (from 0 to 9) covering all levels of the national education system.

However, it should be noted in this aspect that Article 35 of the Law of Ukraine “On Education” (2017) stipulates that a national and sectoral qualifications framework operate in Ukraine. Article 36 of the same Law stipulates that the National Qualifications Framework determines eleven levels (from 0 to 10). Each level of the NQF is determined by the aggregate of the competencies of the individual, typical for the qualifications of the relevant level, which also includes the readiness of the individual for lifelong learning.

The main descriptors of the NQF are:

- knowledge;
- skills (cognitive and practical);
- communication;
- autonomy and responsibility [10].

Table 2 represents the comparison of the descriptors of the European and National qualifications frameworks.

In general, the system of descriptors of the national NQF is consistent with both the European Qualifications Framework for lifelong learning and the Framework of Qualifications for the European Higher Education Area. The key descriptors having been accounted by the NQF from the European Qualifications Frameworks are knowledge, skills, communication, autonomy and responsibility.

The NQF is approved as a generalized structure in Ukraine, by which the qualifications (educational and professional) should be described and compared, it does not include the titles and description of specific

Table 2

Comparison of the European and national qualifications frameworks descriptors

EQF for LLL	QF for the EHEA	NQF
– knowledge and understanding; – applying knowledge and understanding; – making judgements; – communication; – learning skills;	– knowledge (theoretical and/or factual); – skills (cognitive and practical); – competences (autonomy and responsibility).	– knowledge ; – skills (cognitive and practical); – communication ; – autonomy and responsibility .

qualifications, types of qualifications, in particular qualifications of higher education. So far, NQF certification was not carried out in Ukraine, and therefore the NQF is not formally associated with the European Qualifications Frameworks. The projected comparison is given below for qualification levels of NQF related to higher education with qualification levels of the European Qualifications Framework for lifelong learning and cycles of the Framework of Qualifications for the European Higher Education Area in Table 3 [1; 10].

Having examined the main aspects of the European and the features of the National Qualifications Frameworks regarding the levels and qualifications of higher education, the requirements and mechanisms should be considered for the development and implementation of educational programs as defined by the current legislation.

The Law of Ukraine “On Education”, the section IV “Standards of Education, Educational Programs, Qualifications and Education Documents”, in particular Article 33, reveals the main requirements for educational programs [5].

The educational program should include:

- requirements for persons who can start the program;
- a list of educational components and its logical consistency;
- the total amount of study load and the expected results of training for education applicants.

Institutions of education, scientific establishments and other subjects of educational activity develop educational programs and it is approved in accordance with this Law and special laws. Educational programs should include educational components for the free choice of education applicants.

Table 3

Comparison of the qualification levels of the NQF and the innovations of the Law of Ukraine “On Education” with the European Qualifications Frameworks

EQF for LLL	QF for the EHEA	NQF dated 23.11.2011 No. 1341	Qualifications of Higher Education in accordance with the NQF dated 23.11.2011 No. 1341	Law of Ukraine “On Education” dated 05.09.2017 No. 2145-VIII	Levels of education in accordance with the Law “On Education” Dated 05.09.2017 No. 2145-VIII
		Level 0		Level 0	preschool education
Level 1		Level 1		Level 1	primary education
Level 2		Level 2		Level 2	basic secondary education the first (initial) level of vocational education
Level 3		Level 3		Level 3	industry-specific education the second (basic) level of vocational education
Level 4		Level 4		Level 4	the third (higher) level of vocational education
Level 5	short cycle	Level 5		Level 5	pre-tertiary education
Level 6	the first cycle	Level 6	Junior Bachelor	Level 6	initial level (short) cycle level of HE
Level 7	the second cycle	Level 7	Bachelor	Level 7	the first (Bachelor's) level of HE
Level 8	the third cycle	Level 8	Master	Level 8	the second (Master's) level of HE
		Level 9	Doctor of Philosophy	Level 9	educational and scientific/ educational and creative level of HE
			Doctor habil.	Level 10	scientific level of HE

Educational establishments may use standard or other educational programs developed and approved in accordance with this Law and special laws.

The system of external quality assurance of education includes the accreditation of educational programs. Article 44 of the Law of Ukraine “On Education” stipulates that the accreditation of the educational program is the assessment of the educational program against the standard

of education, as well as the capacity of the educational institution to ensure the achievement of the results of education provided by the educational program. Accreditation of the educational program is voluntary and conducted due to the initiative of the educational institution. The educational program is accredited if it is provided for by a special law. Special laws determine principles of accreditation of educational programs. Quality assurance authority accredits the educational program of the relevant level of education according to the special law as well as accredited public professional associations or other accredited legal entities conducting an independent assessment of the quality of education and educational activities in educational institutions [5].

The standard of higher education (Article 10, item 3) defines the following requirements for an educational program in the Law of Ukraine “On Higher Education”, in Section III “Standards of Educational Activities and Higher Education”:

- 1) the amount of ECTS credits necessary for obtaining a corresponding degree of higher education;
- 2) the list of competences of the graduate;
- 3) the normative content of the training of higher education applicants formulated in terms of learning outcomes;
- 4) forms of examination for higher education applicants;
- 5) requirements for the existence of an internal quality assurance system for higher education;
- 6) requirements of professional standards (if any) [4].

The institution of higher education develops a curriculum for each specialty on the basis of the relevant educational program, which defines the list and volume of academic disciplines in ECTS credits, the sequence of studying disciplines, the forms of training sessions and its amount, the schedule of the educational process, the forms of current and final control.

Individual curricula for students are to be developed and approved on the grounds of the curriculum in accordance with the prescribed procedure by HEI, and it must include among others selected academic disciplines by higher education applicants.

The institution of higher education may introduce specialties, the list of which is determined by the higher educational institution within the limits of its licensed specialty.

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In addition to the requirements specified in Article 16, item 2, the necessity is specified of monitoring and periodicity of the educational programs revision and item 7 provides for publicity of information on educational programs, degrees of higher education and qualifications [4].

Methodological Recommendations on the Development of Higher Education Standards approved by the order of the Ministry of Education and Science of Ukraine dated 01.07.2016 No. 600 disclose in more detail mechanism of standards developing for higher education upon which educational programs are being developed [9].

In methodological recommendations defines the “Standard of Higher Education” as a set of requirements for the content and results of educational activities of higher educational institutions and scientific institutions at each level of higher education within each specialty.

Higher education standards are developed for each level of higher education within each specialty in accordance with the National Qualifications Framework (NQF).

Higher education standards are used to determine and assess the quality of the content and results of educational activities of higher educational institutions (scientific establishments).

The higher education standard distinguishes the following requirements for an educational program:

- 1) the amount of ECTS credits necessary for obtaining a corresponding degree of higher education;
- 2) the list of competences of the graduate;
- 3) the normative content of the training of higher education applicants formulated in terms of learning outcomes;
- 4) forms of examination for higher education applicants;
- 5) requirements for the existence of an internal quality assurance system for higher education;
- 6) requirements of professional standards (if any).

A higher educational institution or a scientific establishment relying on an educational program (EP) develops a curriculum for each specialty defining:

- list and volume of academic disciplines in ECTS credits;
- sequence of studying disciplines;
- forms of holding training sessions and its volume;
- schedule of the educational process;
- forms of current and final control.

The head of the higher educational institution or a scientific institution approves working curriculum schemed to specify the planning of the educational process for each academic year.

New standards for higher education are the next generation of standards and supersede the Sectoral Standards for Higher Education (SSHE) developed in 2002-2014 in accordance with the law. Standards rest upon a competence approach and share the philosophy of defining the requirements for a specialist adopted from the Bologna Process and the international Project of European Commission “Tuning Educational Structures in Europe” (TUNING).

Fig. 1 vividly illustrates consecutive sections of the development structure algorithm of the Standard for Higher Education.

Let's characterize nine sections of the structure of the Standard for Higher Education.

Section I “Preface”. The section specifies the initial data of the Standard (title, date, order number); the extended information is indicated of the Standard developers (name, patronymic, scientific degree, academic rank, position and title of the organization they work); data is provided on the review and approval of the Standard, information is reported on the proposals by the sectoral government bodies, to which the higher education institutions belong, and sectoral associations of employer organizations; the date and order number of the National Agency for Quality Assurance in Higher Education having agreed upon the Standard for Higher Education.

Section II “General characteristics” consists of such parameters as the level of higher education determined by Art. 5 of the Law of Ukraine “On Higher Education” (initial level (short cycle) of higher education, the first (bachelor) level, the second (master) level, the third (educational and scientific) level; the degree of higher education determined by Art. 5 of the Law of Ukraine “On Higher Education” (Junior Bachelor, Bachelor, Master, Doctor of Philosophy); the branch of knowledge and specialty determined by the Resolution of the Cabinet of Ministers of Ukraine dated 29.04.2015 No. 266; educational qualification defined in Article 7 of the Law of Ukraine “On Higher Education” consisting of information on the degree of higher education gained by an individual, specialty and specialization (if any); qualification in the diploma consists of an educational qualification (specialty is indicated if available) and professional qualification; the description of the subject area determined in accordance

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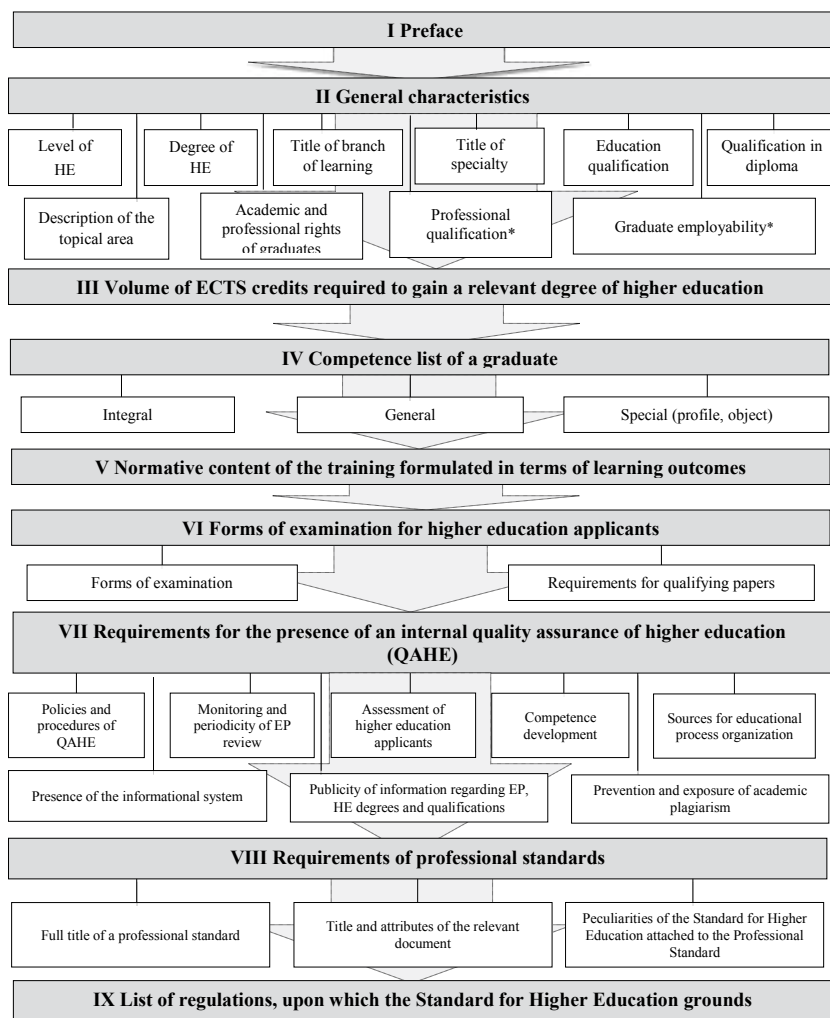


Fig. 1. Development structure algorithm of the standard for higher education

with item 15 of the ISCED-F 2013 (subject(s) of study and/or activity, objectives of training, theoretical content of the subject area, methods, techniques and technologies, tools and equipment); academic graduate

rights, described opportunities, requirements and/or recommendations for continuing education; employment of graduates; indicated professions, professional titles of works (according to the current edition of the National Classification of Ukraine: Classification of Occupations (DK 003:2010) and International Standard Classification of Occupations 2008 (ISCO-08)).

Section III “Volume of ECTS credits required to gain a relevant degree of higher education”. The volume of educational programs is determined in ECTS credits, the quantitative indicators of which is defined by the Law of Ukraine “On Higher Education”.

Section IV “Competencies list of a graduate” consists of three blocks of competences: integral (using the description of the higher education level, corresponding qualification level of the National Qualifications Framework (NQF)); general (the list of general competences is correlated with the description of the corresponding qualification level of the NQF. It is recommended to select the general competencies from the list of the TUNING project (5-15 competencies taking into account the level of education)); special (profile, object) (the list of competences also correlates with the description of the qualification level of the NQF. It is recommended to select special (profile, object) competences from the TUNING project list (10-20 competences taking into account the level of education)).

Particular attention should be paid to the fact that the competences of the graduate reflect the views of external customers: employers, professional associations, graduates, etc. on education and/or vocational training and it should maximize employability.

Section V “Normative content of the training formulated in terms of learning outcomes”. The results, outcomes and integrative learning effects are defined by the Standard to determine the normative content of the training. The total number is 15-25 learning outcomes correlating with the above list of general and special (profile, object) competences. The usage of one among the recognized classifications, in particular, by the authorship of B. Bloom is recommended to ensure consistency and identity in the description of the learning outcomes.

Section VI “Forms of examination for higher education applicants”. The section defines the forms of examination for higher education applicants, requirements for qualifying work, requirements for the attestation/unified state qualification exam (exams) and requirements for public defense (demonstration).

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Section VII “Requirements for the presence of an internal quality assurance of higher education”. The quality management system should be implemented for education activity and higher education in the HEI (system of internal quality assurance), which ensure the applying of the procedures and measures presented in Figure 1.

Section VIII “Requirements of professional standards (if any)”. Information is noticed on available professional standards (of national and international organizations) (document title, attributes and/or references) introduced in the Standard for Higher Education and (or) which are important for taking into account while constructing and implementing the educational (educational and professional) programs. Provision of this information is obligatory in case of reference of professional qualification awarded to graduates in the standard.

The educational program is being developed by the graduate project team of the department (inter-departmental group), approved by the academic council of the University and put into operation by the order of the rector.

According to Article 30 of the Law of Ukraine “On Education” [5] and Article 16 of the Law of Ukraine “On Higher Education” [4], higher educational institutions should provide publicity information on educational programs, degrees and qualifications on their websites. Educational programs developed at the Kharkov National Economic University named after Semen Kuznets and placed in the free access on the university's website http://www.hneu.edu.ua/Educational_programs_KhNUE are considered as an example of the requirements accounting of the Laws of Ukraine “On education”, “On higher education” and the methodological recommendations of the MESU.

Let's analyze European standards and guidelines on the development of educational programs.

Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) [2].

ESG is a set of standards and recommendations for both internal and external assurance of quality and learning environments in higher education.

The key objective of the “Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)” is to promote a common understanding of the quality of teaching and learning, regardless of the frontier between all stakeholders.

The ESG has the following objectives:

- establishment of a common framework for quality assurance in teaching and learning at European, national and institutional levels;
- promotion the provision and improvement of the quality of higher education in the European Higher Education Area;
- support of mutual trust. Facilitating recognition and mobility within and beyond national boundaries;
- providing information on quality assurance in the EHEA [2].

ESG grounds on the four principles of quality assurance in the European Higher Education Area, namely:

- higher educational institutions have a certain responsibility for the quality of the provided higher education;
- quality assurance corresponds to the diversity of the system of higher education, higher educational institutions, programs and students;
- quality assurance contributes to the development of a quality culture;
- quality assurance caters to the needs and expectations of students, all other stakeholders and society.

Components of policies and procedures managing the quality of a HEI (ESG):

1. Quality assurance policy.
2. Development and approval of educational programs.
3. Student-centered training, teaching and assessment.
4. Matriculation, achievement, recognition and attestation of students.
5. Teaching staff.
6. Educational resources and student support.
7. Information management.
8. Public information.
9. Current monitoring and periodic review of programs.
10. Cyclic external quality assurance [2].

The quality assurance standards are divided into three parts: internal, external and quality assurance agencies. The identified parts are interconnected and form together the basis of the European Quality Assurance Framework. Standards and guidelines for the development of educational programs are considered as part of the internal quality assurance.

The part of development and approval of educational programs stipulates in the standard of this direction that institutions should implement the process of developing and approving its programs.

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The following requirements are put forward in accordance with the recommendations to the educational programs:

- educational programs should be located at the center of the institution mission related to teaching; meet the institutional strategy and take determined and expected effect;

- the development of an educational program takes place with the active involvement of students and stakeholders;

- the four objectives of the Council of Europe are desirable to be reflected for higher education in the structure of the educational program;

- educational programs should be designed in such a way the student to have the opportunity to obtain academic knowledge and skills in the learning process that can affect professional development and personal growth.

According to the ESG guidelines, one of the key requirements for developing an educational program is student-centered learning and teaching. Higher educational institutions should ensure the programs implementation in such a way to encourage students to take an active part in the development of the educational process, and student assessment should reflect this approach. Therefore, this aspect plays an important role in stimulating student motivation, introspection and involvement to the educational process and facilitates the inclusion of students in the process of developing, implementing educational programs in general and evaluating learning outcomes in particular.

The introduction of student-centered learning and teaching is such that it:

- respects and takes into account the diversity of students and their needs, enabling flexible learning trajectories;

- considers and uses different ways of providing educational services;

- flexibly uses various pedagogical methods;

- regularly evaluates and adjusts the methods providing educational services and pedagogical methods;

- promotes mutual respect in the relations of “student-teacher”;

- includes proper procedures for examining student complaints.

Quality assurance procedures for evaluation envisage:

- students are familiar with the existing methods of testing and examinations and receive support for developing their own skills in this area;

- criteria and methods of evaluation are made public in advance;

- the assessment allows students to demonstrate the extent to which the planned results have been achieved.

The ESG guidelines focus on information management, public information, current monitoring and periodicity of viewing educational programs. Let's examine each of these directions in more detail and determine the key issues.

Information management. The standard states in this area that institutions should ensure the collection, analysis and use of relevant information for the effective management of its educational programs. Effective processes collecting and analyzing information about educational programs and other activities support the system of internal quality assurance. The satisfaction of students with educational programs is the key argument for the development and update of educational programs.

Public information. The standard states in this area that institutions should publish clear, accurate, objective, timely and easily accessible information on its activities, in particular on educational programs. Presented public information on the higher institution and educational programs particularly should be directed and useful for entrants, students, graduates and employers. Public information should include in its structure: a list of educational programs and requirements for entrants, cut-off score; planned learning outcomes for these educational programs; training, teaching and assessment procedures; additional opportunities available to the student; as well as information on the employment of graduates.

Current monitoring and periodicity of program review. The standard of this direction specifies that institutions should monitor and periodically review educational programs. The guidelines of this standard are to conduct regular monitoring, as well as to create a supportive and effective learning environment. Content of the program, the needs of society, student workload, the effectiveness of student assessment procedures are subject to monitoring. Students and stakeholders should be involved in the process of reviewing and updating programs [2].

Summarizing the ESG standards and guidelines for the development and approval of educational programs the following conclusions may be drawn. Establishments should implement the processes of developing and approving their educational programs. Programs should be designed in such a way to meet their intended goals including the planned learning outcomes. The qualifications should be clearly identified in order to obtain it as a result of studying the program. The educational program should correspond to a certain level of the NQF, as well as the Framework for the European Higher Education Area.

European Commission project “Tuning Educational Structures in Europe”, TUNING.

In the conditions of internationalization and the creation of a single European higher education area designed to increase the competitiveness of European universities, the priority was to ensure the comparability, compatibility and transparency of educational programs. To achieve this goal the European educational community needs to develop common approaches to teaching and learning, a common understanding of the content of qualifications and learning outcomes. A competence approach was to become the basis for developing a common methodology, which in turn grounds on an analysis of professional requirements prioritizing the competences required in a particular area of professional activity.

The TUNING project is directed to bringing educational structures closer in the countries of Bologna process.

A methodology for rethinking curricula and introducing it was developed within the TUNING project to make it comparable. Five topics were identified for the discussion of subject areas:

- general competences or universal skills;
- professional competences;
- role of ECTS as an accumulation system;
- approaches to learning, teaching and evaluation, and the role of quality improvement in the learning process (special attention to systems based on the internal institutional culture of quality assurance) [8].

One of the results of this project was the guidelines for the development of degree program profiles including program competences and program learning outcomes [8]. Let us consider the key positions of the guidelines.

The purpose of the developed methodological recommendations is to develop guidelines clearly for the formation of degree program profiles due to consideration of key program competences and qualitative formulation of learning outcomes.

The developed template for the preparation of the degree program profile takes the key position in the structure of the developed recommendations.

The profile of the program is a very concise document possessing the most relevant information about the competitive degree education program.

The profile determines the subject area or areas where the studies are conducted, defines the level of higher education, as well as specifies the features distinguishing this educational program from other similar programs [8].

The structure of the profile consists of seven components, namely:

- purpose of the educational program;
- characteristics of the educational program;
- learning and teaching style;
- program competences;
- list of program learning outcomes.

It is important to have links to common descriptors, national qualifications frameworks and reference points of subject areas developed by TUNING project while developing or updating an educational program.

Authors of methodological recommendations pay much attention to the design of educational programs and offer to use the developed algorithm under the creation of a new or updated degree educational program (Figure 2).

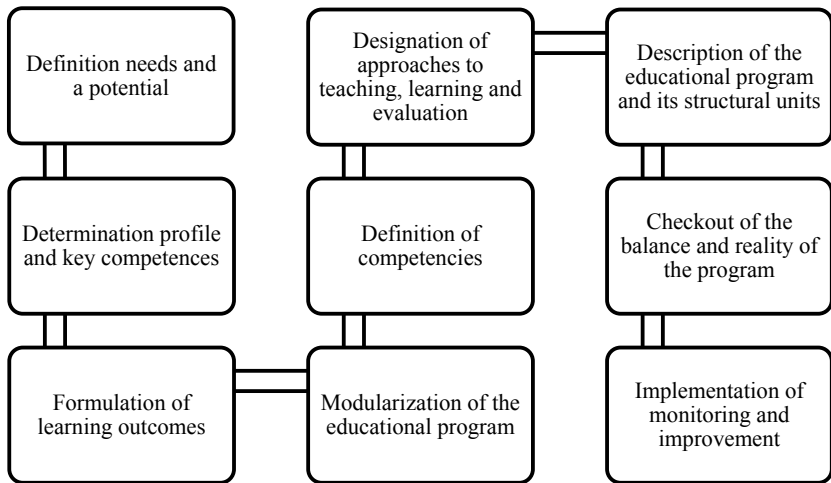


Fig. 2. Algorithm for the creation/improvement of educational programs

Source: according to the methodological guidelines [8]

The TUNING methodology presented in the guidelines can be used by universities to develop educational programs within the framework of the Bologna process for the creation of an academic culture aimed at meeting the needs of students. The TUNING project shows how to develop educational programs proceeding from results, taking into account how the graduate will be ready for real life after completing the learning process, as well as

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taking into account the specific needs at the professional, personal and civil level. The TUNING project allows describing educational programs with the assistance of common terminology in all countries of Europe and beyond it, providing comparability, transparency and attractiveness of educational programs. The TUNING competence approach allows consulting with all stakeholders, including the students themselves, and clearly describing the specific objectives of each program. These goals all together are the profile of the university program.

The development and implementation of training programs should be continuously monitored and evaluated to determine whether the objectives are being met, and whether the goals remain urgent to the changes in the relevant subject areas. The tools and approaches of the TUNING project allow universities effectively to monitor, evaluate, and improve educational programs. Hence, the TUNING project offers a way to improve the quality at the level of educational programs.

The results of TEMPUS international project of the European Union “ALIGN: Achieving and Checking the Alignment between Academic Programmes and Qualification Frameworks” (2017) are set out in the “National Guidelines for the Harmonization of Academic Programmes and Qualifications Frameworks” [11].

ALIGN is a three-year international project supported by the State Reform EACEA No. 35/2012 of 6 Tempus competition for the selection of joint projects. The overall objective of this project is to improve the clarity, consistency and the ability to exchange qualification requirements through the introduction the mechanisms to bring academic programs into line with national qualifications frameworks in a HEI and mechanisms verifying these compliances in Quality Assurance Agencies (QAA). The project involves universities from the Eastern Partnership region – Armenia, Russia, Ukraine. This will allow a deeper understanding of the needs of developing systems and the specifics of each individual institution.

The project objective is to enhance the comprehensiveness, coherence and transfer of qualifications through the establishment of mechanisms to achieve compliance with the qualifications framework (QF) and external quality assurance agencies (EQAA) to verify this compliance by higher educational institutions (HEI).

The specific objectives of the project are:

promotion better understanding by higher educational institutions and quality assurance agencies of the role of national qualifications frameworks,

its structure, as well as differences between individual types and levels of student achievements;

formation of competences by higher educational institutions through writing (preparing) and evaluating learning outcomes according to particular types and levels of achievements, student success and facilitating student-oriented teaching and learning;

formation of competences by higher educational institutions through the regulation of the balance between educational programs and qualifications frameworks to facilitate the transfer of knowledge, general qualification requirements and the implementation of leading experience;

providing assurance agencies of the education quality with the ability to check the appropriateness of the required learning outcomes and the mechanisms for its evaluation at all levels through the introduction of a system ensuring a constant perception by each institution.

The main results of the project include:

development of facilities by higher educational institutions and the quality assurance agencies for balancing and coordinating educational programs and national qualifications frameworks;

development of mechanisms for arrangement with national qualifications frameworks (for higher educational institutions);

development of mechanisms for verification of conformity (for quality assurance agencies);

bringing 2 educational programs in each higher educational institution in accordance with European standards and requirements of the qualification frameworks and a pilot assessment of the developed mechanisms;

adaptation of the developed mechanisms in higher educational institutions, education quality assurance agencies and at the governmental level;

organization retraining courses for high school staff to evaluate academic performance and disseminate student-oriented learning and teaching.

The process of development and approval of educational programs consists of seven consecutive stages in the developed guidelines of the project.

4. Conclusions

Summarizing the analysis results of the European projects with the regard to the improvement of the higher education system (ESG), the development and update of educational programs (TUNING), the harmonization of educational programs and qualifications frameworks (ALIGN), it contributes

to the integration of higher education of Ukraine into the European space implementing the conditions and policies of the Bologna Process. The results of generalization and development may be aimed at improving the indicators of internal quality assurance of higher education.

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**FUTURE TEACHERS OF HUMANITIES'S
PEDAGOGICAL MASTERY FORMATION
USING INTERACTIVE TECHNOLOGIES**

Romanyshyna Oxana¹

Figol Natalia²

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Abstract. The analysis of the scientific investigations concerning future teachers of humanities pedagogical mastery formation in pedagogical theory and practice has been carried out. The essence of pedagogical mastery (pedagogical mastery is considered as a combination of psychological and pedagogical erudition, professional abilities and pedagogical technique), the features of the process of professional training of future teachers in higher educational institutions have been characterized (professionally expedient, individually creative and optimal); the specifics of pedagogical skills of teachers of humanitarian specialties have been revealed; the possibilities of creative use of means of interactive technologies in teachers' professional training have been revealed. The following methods and means of interactive technologies have been defined and substantiated: co-operative education (work in pairs, students' integration into teams with three representatives, carousel, work in small groups, aquarium); education in groups (microphone, unfinished sentences, brainstorming, learning while teaching, problem solving, decision tree); situational education (stimulating or simulation games, public hearings); processing of discussion issues (discussion, debate, PRES method, taking a position, position change, uncontinuous scale of thoughts), etc. It has been found out that a comprehensive research of the practical mechanisms for the pedagogical mastery formation using pedagogical innovations of an interactive nature was not practically carried out. The generalization of scientific approaches to the concept of

¹ Doctor of Pedagogical Sciences, Associate Professor,
Associate Professor of the Department of Informatics and its Teaching Methods,
Ternopil Volodymyr Hnatiuk National Pedagogical University, Ukraine

² Candidate of Pedagogical Sciences,
Associate Professor of the Department of Pedagogy and Psychology,
Regional Humanitarian and Pedagogical Academy of Taras Shevchenko in Kremenets, Ukraine

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“pedagogical conditions” understanding allowed to ground pedagogical conditions for the future teachers’ pedagogical mastery formation by means of interactive technologies: educational process improvement through the development of motivation to the acquisition of pedagogical mastery using means of interactive technologies; gradual formation of pedagogical skills through pedagogical probation practice and extracurricular activities; provision of subject-subject interaction of the teacher and students in the process of pedagogical mastery formation by means of interactive technologies. The chosen pedagogical conditions proved to be effective in the presence of a model for the of pedagogical mastery formation. The author’s interpretation of the concept teacher’ “professional competence” is a complicated complex that includes professional knowledge, skills, readiness for activity, as well as a number of professionally important personal qualities such as: creativity, mobility, sociability, tolerance, tranquility, sensitivity, benevolence, the desire for self-knowledge, self-development and self-realization, self-reflection, and others. The basic components have been defined (gnostic, creative, constructive, communicative and organizational); criteria (formation of scientific and theoretical knowledge, mastery of skills and abilities, optimality of the content selection, methods, techniques, means of teaching, the presence of humanity, democracy and dialogue in communication, effective management of students’ educational and cognitive); levels (reproductive, reconstructive and creative level) of the formation of pedagogical skill. According to the author’s vision, the model of pedagogical mastery formation of future teachers of the humanities with the use of means of interactive technologies with the following components has been developed and implemented: the purpose of pedagogical mastery formation among future teachers of humanitarian specialties by means of interactive technologies; structural components of pedagogical skill (humanistic orientation, professional competence, pedagogical abilities, pedagogical technique); interactive components of the of pedagogical mastery formation (content, methods, forms and means), which were realized under certain pedagogical conditions of student’s education; tasks that are implemented gradually; criteria, components, and levels of students’ pedagogical skills formation, is reflected as a result of an experimental study – the formed future teachers of humanities’ pedagogical mastery. The educational and methodical provision of the future teachers of humanitarian specialties’ training, which is aimed at the formation of pedagogical mastery has been

substantiated and developed. Educational and methodological support includes a complex combination of theoretical (advanced programs of educational disciplines “Pedagogy”, “Basis of pedagogical mastery” and “Foreign language Teaching methods”), practical training, extra-curricular and educational work with the use of various interactive technologies (subject, problem, interactive lectures, press conferences, round tables, trainings, counseling), methods (situation analysis, “mosaic”, role play, “snow ball”, etc.). The studies that were conducted confirmed the feasibility of pedagogical conditions introducing and the models of pedagogical mastery formation in the educational process of a higher educational establishment.

1. Introduction

In modern conditions of the state development pedagogical education faces an acute problem of improving the work of higher educational institutions preparing future teachers with a high level of professionalism and creative activity, those who would responsibly treat their future professional activities. Paradigmatic changes in the goals of education define a new understanding of teacher’s functions, abilities, professional skills, oriented to the competence and mastery. This issue is studied by modern Ukrainian scientists: I. Bekh, I. Zyazyun, N. Nichkalo and others. As it was stated in the National Doctrine on Education Development in Ukraine the training of pedagogical staff is a central task of modern education, a guiding principle of state educational policy.

Currently, most of the higher education institutions teach students who are the bearers of certain knowledge, not teacher-professionals, organizers of the educational process. Therefore, the problem of teacher’s mastery formation is of great interest to a wide range of scholars.

The peculiarities of the content, structure and manifestations of the teacher’s professional mastery was described in the scientific works of such modern scholars as L. Baikova, E. Barbina, L. Grebenkina, I. Zyazyun, L. Kovalchuk, L. Kramuschenko, I. Kryvonos, O. Lavrinenko, O. Miroshnyka, V. Semychenko, N. Tarasevych, N. Telychko, I. Kharlamov and others; The connection between creativity and pedagogical maserness was taught by V. Zagvyazynsky, V. Kan-Kalyk, N. Kichuk, S. Sysoeva and others; Professional competence was studied by L. Vashchenko, M. Zhaldak, I. Zymnya, I. Zyazyun, O. Lokshina, N. Nychkalo, O. Ovcharuk, O. Pometun, L. Romanishyshina, O. Savchenko, S. Sysoev, O. Semenogh, A. Khutorskaya etc.

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The dominant activity is training of such a type of a teacher, whose activities are not limited by teaching a particular subject, but a professional capable to provide interdisciplinary communication, who realizes the importance of professional knowledge in the context of the social and cultural space. His ability to organize the educational process as a pedagogical interaction, aimed at the development of a personality and his or her ability to solve problems in the process of life-creation is of great importance.

The increased demands of the society provoke changes in the organization of the educational process by introducing interactive technologies into the educational process of higher education. The issue concerning the introduction of interactive teaching in the higher education practice have been revealed in scientific researches by N. Dobrynina, N. Zayachkivska, M. Kozyar, N. Kolesnik, K. Lutsyk, I. Melnychuk, G. Pyatakov, O. Sichkaruk and others. However, the issue of future teachers of humanities' pedagogical mastery formation by means of interactive technologies has not been a subject of a separate scientific research yet.

Special attention to the teachers of humanities' pedagogical mastery formation is paid due to the fact that teachers of this profile should be able to take into account a set of psychological and pedagogical factors that significantly affect the formation of a personality, the basis of such knowledge is laid in the study of humanities.

The **purpose** of the scientific research is to substantiate theoretically and verify experimentally the pedagogical conditions for the future teachers of humanities' pedagogical mastery formation by means of interactive technologies.

2. Pedagogical mastery as a component of teacher's professional competence

One of the problems of modern society is a lack of competent, highly skilled competitive professionals in the labor market. Therefore, high educational institutions should now pay considerable attention to the future teachers' professional skills formation.

Many foreign and domestic scientists studied the problem of the teacher's professional competence: L. Vashchenko, V. Vvedenskyj, M. Zhaldak, I. Zyazyun, M. Kornilova, O. Lokshina, N. Nychkalo, O. Ovcharuk, A. Pometun, L. Romanyshina, O. Savchenko, S. Sysoeva, O. Semenog, O. Khutorskoy and others.

The goal of this scientific research is to determine the essence and content of the teacher's professional competence and pedagogical mastery as one of its components.

An analysis of modern scientific and pedagogical literature gives us rise to assert that the majority of scientists (V. Vvedensky, R. Gurevich, L. Mitin, S. Molchanov, S. Pilyova, V. Sinenko, K. Shaposhnikov) believe that the teacher's professional competence is a mix of knowledge, habits, skills, experience, as well as his or her personal qualities.

In modern scientific literature two terms which refer to the English word "competence" ("competency") are used, – competence and competency. In English these words are synonymous, but in Ukrainian they have some difference. O. Hutorskyj's interprets the notion of "competency" as follows: "it is a pre-determined requirement to the student's educational training with a goal to master a set of interrelated qualities of the personality, knowledge, skills" [4, p. 4]. While "competence", in his opinion, is "a person ability to possess an appropriate competence, which includes his or her personal attitude to this competence and subject of activity" [4, p. 5].

I. Zimnya interprets competency as "intellectually and personally conditioned experience of a person's socially professional activity which is based on knowledge". By contrast, competence is "a hidden, potential, non-useable reserve" [16, p. 39].

G. Selevko gives the following definitions to these categories: competence is "an educational result that is manifested in the graduate's readiness to teaching, in his mastering the methods and means of future occupation, in the ability to cope with the tasks; a combination of knowledge, skills and abilities that allows you to set and achieve the goal of transforming the environment" [12, p. 139]; competency is "the individual's integral quality which is manifested in his or her general ability and readiness to occupation based on knowledge and experience acquired in the process of learning and socialization and oriented towards independent and successful participation in the future occupation" [12, p. 139].

In "The Dictionary of the Ukrainian Language", the word "competence" is interpreted as "a deep knowledge in something; authorization of any organization, institution or a person" [1, p. 188].

In the definitions of competence mentioned above there is a practical orientation of occupation, value component, reflection.

At the same time, the analysis of existing ground works concerning the

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teacher's competence indicates that this time in science there is no unique approach to the phenomenon understanding, there is a heterogeneity of terms used by the authors to denote this phenomena, among which the most common are "pedagogical competence" (L. Mitina), "the teacher's professional competence" (B. Gershunsky, T. Dobud'ko, A. Markova), psychological and pedagogical competence (M. Lukyanova), and also they are considered to be synonyms (Yu. Kulyutkin and G. Sukhobanska).

We strongly hold the view that the above mentioned concepts are synonymous and can be used interchangeably, since they are a kind of pedagogical profession.

The level of teacher's competence in pedagogical problems solving is determined by his or her pedagogical skills.

So, having analyzed the literature devoted to the study of *teacher's professional competence*, we came to the conclusion that this phenomenon is a complex set that includes professional knowledge, habits, skills, readiness to teach, as well as a number of professionally important personal qualities such as: creativity, mobility, communicability, tolerance, balance, sensitivity, benevolence, desire to gain a high level of self-knowledge, self-development and self-realization, self-reflection, etc.

The concept "the teacher's professional competence" was mostly determined by scientists and the approach has been unified, however, there is no unity of thoughts concerning all occasion of professional competence structural components in general, and teachers in particular.

Thus, vocational and pedagogical competence, according to N. Kuzmina, includes five elements or types of competencies: special and professional competence, methodical competence in the field of methods of students knowledge and skills formation, social and psychological competence in the field of communication processes; differential and psychological competence regarding students' abilities, autopsychological competence of dignity and disadvantages of their own activities and personality [6, p. 56].

In the structure of the teacher's professional competence A. Markova highlighted special, social, personal and individual types of professional competence [9, p. 34-35].

The teacher's mastery is determined by the combination of all types of professional competence. In addition, the teacher's competence of can be considered as the unity of the general competence essential for

a person, regardless of his or her profession, competence in the field of science, the basis of which he teaches, psychological and pedagogical competence.

A great number of scientists (A. Makarenko, V. Mezhererikov, T. Yuze-favichus, etc.) studied the issue: what is the balance between teacher's "professional competence" and "pedagogical skills". A satisfied answer was given by A. Makarenko. Rejecting the assertion about the precondition of pedagogical mastery by innate peculiarities and instincts, he showed that it is predetermined by the level of professional competence. "Pedagogical mastery, based on skills, on qualifications, in his opinion – is the deep knowledge of the pedagogical process, the ability to create it, set in motion" [7, p. 234].

Sometimes pedagogical mastery is reduced to the habits and skills of pedagogical techniques, while this is only one of the components of mastery that manifests from the outside. According to A. Makarenko, mastery of pedagogical skills is accessible to every teacher, if he or she is ready to purposeful work on himself or herself. "Mastery is something that can be achieved. If it is possible to become a famous professional turner, a wonderful doctor, so it is possible to be well-known professional teacher ... And each of the young teachers will gain the mastery if he or she does not leave our occupation, and the level of masteress depends on his or her desire to work hard" [7, p. 235].

Mastery *is formed on the basis of practical experience*, but not any kind of experience can become a source of professional skill. Only comprehensive hard work in terms of its essence, goals and techniques of occupation can become such a source. Pedagogical mastery is a mix of personal, business qualities and professional competence of a teacher.

Academician I. Zyaziun, a founder of the scientific and practical approach of pedagogical mastery, considers the essence of pedagogical skill as a complex of personality's peculiarities, which ensures the self-organization of a high level of professional activity on a reflexive basis.

These important properties include:

– humanistic orientation (focused on the student's development; seeing not just an individual but a personality, feel, understand and help him or her; to see a big goal in any did; "cultivate" a personality through discovery, rather than inclining; be responsible for own influence; to experience moral satisfaction at the students' development);

- professional competence (complex of knowledge concerning the subject, psychology, pedagogy, methods, personal coloring of knowledge, constant knowledge updating);
- pedagogical abilities (communicative, perceptual, dynamism, emotional stability, optimistic foreseeing, creativity);
- pedagogical technique (external and internal) [15, p. 29-30].

Studying different points of view concerning the concept of “pedagogical mastery” of pedagogical activity has allowed to conclude that pedagogical mastery is a high level of professionalism, pedagogical culture in professional and pedagogical problems solving, essential personal qualities. Different levels of manifestation of mastery are variants of the teacher’s expression of his or her individuality in the profession: from the low, on which the borrowed experience and techniques are repeated, to the highest (creative), where the teacher creates his or her own pedagogical system.

Pedagogical mastery should be considered not only as a high degree of professional knowledge, skills and abilities but also as a certain set of requirements put forward the teacher by specific education system.

3. Interactive technologies used for pedagogical mastery formation of the future teacher of the humanities

According to the results of the first “consultative” (konstatuvalnyi) stage of the research, it has been concluded that the technology of teaching used in high educational establishments with its traditional, standard forms, methods, means, content, goals, and objectives of teaching will not promote the formation of future teachers of humanitarian disciplines’ (humanities) pedagogical mastery.

Therefore, it is necessary to make changes in the educational and methodological complexes of professionally oriented disciplines, to enrich curriculum with such topics that include the concept “interactive learning technologies”, with information about their features, types, peculiarities of the lesson plan using them, peculiarities of interactive lesson planning, the specifics of the the students’ activity at such a lesson, the particular features of the teacher’s activity at such lessons, the peculiarities of the favorable educational environment creation, the creation of comfortable learning conditions, organization of students’ interaction in the classroom, organization of reflection, various forms of mutual learning. The word “interactive” derives from an English word “interact”, where “inter” is mutual, “act” –

act. According to the definition that was found in The Pedagogical Encyclopedic Dictionary by B.M. Bim-Bada, interactive learning is a type of learning that is based on interaction between a learner and learning environment, which is an area of assimilated experience. Ukrainian scientists O. Pometun and L. Pyrozhenko have pointed out that “interactive learning is a learning process that can exist only if there is active interaction among all participants. It is so called co-education, mutual learning (studying in small and large groups), where the student and the teacher are equal members in the teaching- learning process” [11, p. 9].

Special attention was focus to the formation of pedagogical mastery of humanitarian disciplines. We would like to demonstrate the methodology of pedagogical mastery forming at lectures, seminars, practical and laboratory classes, and organization of studying independently independent studying”.

Scientists offer an interactive lecture as an alternative to a traditional lecture. In the scientific and methodological literature the following types of interactive lectures have been named and described: a lecture with mistakes, made on purpose, problem-based lecture, lecture with two lecturers, lecture with visualization, lecture-press conference, lecture-dialogue [13, p. 56].

Seminars and practical classes allow the teacher to apply a larger set of interactive technologies than could be used at a lecture: brainstorming, analysis of specific situations, work in pairs, work in small groups, didactic games, and more.

Interactive methods contribute to teach interestingly, provoke new information searching of [8].

Seminars and practical classes at pedagogical disciplines provide discussion of educational problems in groups. Interactive technologies are used with an aim to make this process more creative, emotionally comfortable, and develop students' personal qualities.

4. Model of pedagogical mastery formation of the future teacher of humanities

In the process of model specification of the pedagogical mastery formation of the future teachers of humanities, the authors relied on different concepts: the system-role model of personality formation (N. Talanchuk) [14], and the pedagogical and psychological structure of the teacher's occupation (N. Kuzmina) [5].

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The model developed reflects the efficiency of interactive technologies usage in high school by the experimental teaching method which is used to teach future teachers of “humanities”. At the same time, this model serves as a source of empirical and theoretical knowledge concerning the possibilities and consequences of a scientifically grounded method “implementing implemented” in future teachers of humanities vocational training.

The graphic representation of the author’s pedagogical model is presented in Fig. 1.

The model illustrates that the pedagogical mastery is the goal of combination and interconnection of its components in future teachers of humanitarian subjects by means of interactive technologies; structural components of pedagogical mastery; interactive components of the pedagogical mastery formation (content, methods, forms and means) that were realized under certain pedagogical conditions in the process of students’ education; tasks that are implemented gradually; criteria, components and levels of of students’ pedagogical mastery formation, reflected as a result of the experimental research – the formed pedagogical mastery of future teachers of the humanities.

The first block of the pedagogical model is the goal, that is, a high level of pedagogical mastery formation of future teachers of humanities using interactive technologies.

We consider it expedient to name and characterize the components of “pedagogical mastery”.

The study and analysis of scientific pedagogical works and dissertational research allows us to conclude that pedagogical mastery is a characteristic of pedagogical activity, which is carried out at a high level. As to the components of pedagogical mastery, its main characteristic is humanistic orientation. Humanistic orientation of each personality is multifaceted, its value orientations are as follows: directed to oneself (self-affirmation, self-presentation, self-regulation, self-education, self-realization, self-esteem, etc.); to means of pedagogical influence (educational ideals, educational measures, etc.); to a student (development and formation of his personality, assistance his goals achieving, etc.); to methods of pedagogical influence (belief, own example) [2, p. 70].

A second important element of a teacher’s pedagogical mastery is professional competence which characterizes the unity of his or her theoretical and practical readiness for the pedagogical occupation, and his or her professionalism [3, p. 69-73].

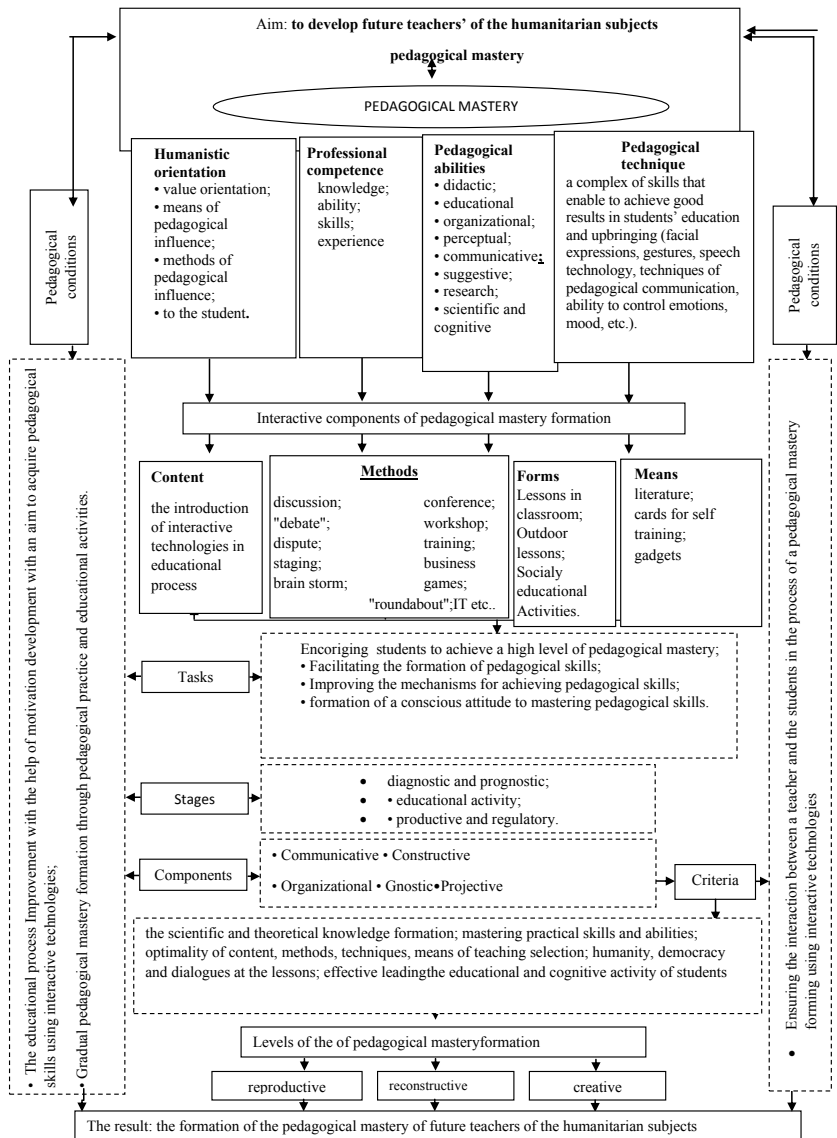


Fig. 1. Structural and functional model of pedagogical mastery formation of future teachers of humanitarian subjects

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The mastery acquisition is not limited by professional knowledge accumulation. There are individual preconditions for successful activity, stimulators of teacher's professional growth – abilities [15, p. 33].

Psychological researches testify that any professional activity requires not only deep knowledge in one's occupation, but also the development of abilities. On the basis of scientific research (V. Vernadsky, L. Vygotsky, G. Kostyuk, A. Shcherbakov, N. Kuzmina, M. Skatkin, A. Leontiev, etc.) the following leading abilities in pedagogical activity can be distinguished: didactic, educational, organizational, perceptual, communicative, suggestive, research, scientific and cognitive.

The next component of pedagogical mastery is pedagogical technique as a form of the organizing teacher's behavior. Knowledge, intentions and abilities without skills, teaching methods mastery can not guarantee high results. Pedagogical technique presupposes an ability to regulate teacher's own well-being, the teacher's ability to use his or her verbal and nonverbal means of communication and educational impact on students. Thanks to skill and abilities mentioned above, the teacher creates his or her professional image [3].

The pedagogical conditions contribute to the formation of pedagogical mastery components (gnostic, design, constructive, communicative and organizational). Thus, pedagogical conditions are an improvement of the educational process through the development of motivation with an aim to acquire pedagogical mastery using interactive technologies; gradual formation of pedagogical mastery through pedagogical practice and educational activities; providing interaction between the teacher and students in the process of pedagogical mastery formation using interactive technologies.

The introduction of interactive methods in the educational process: discussions, debates, disputes, staging, brainstorming, conferences, workshops, training, business games, "carousels", information technologies, etc. was effective in pedagogical mastery formation.

In the process of the experimental phase of the research, educational literature, didactic cards, cards for self-training and computer technologies were used for different forms of studying.

For the organization of this study the following study forms were relevant: classroom, extra-curricular, an educational work.

Important structural elements in the model of pedagogical mastery formation are the definition of the main tasks and stages at which these tasks

will be implemented. In the process of research, we identified the following tasks:

- to initiate students' desire to achieve a high level of pedagogical mastery;
- to promote the formation of pedagogical skills;
- to improve the mechanisms of pedagogical mastery achievement;
- to form a conscious attitude towards the mastery of pedagogical skills.

The tasks according to the author's model were implemented in three main stages. The first stage, diagnostic and prognostic, provides a clear definition of the goals and objectives of the process of the students pedagogical mastery formation, the justification of methodological approaches to the implementation of this process; development of the program and tools of experimental research, namely: definition of the studied concepts, choice and justification of research methods, development of questionnaires, themes of creative tasks; selection of criteria, indicators and levels of students' pedagogical mastery formation; study of the real state of students' pedagogical mastery formation at the stage of constatation; theoretical justification of the model of pedagogical mastery formation of future teachers of humanities. The second educational and business course is the main stage in the formation of the pedagogical skills of future teachers. This stage involves modifying the system of educational work in educational institutions through the introduction of interactive technologies into the educational process (testing the modules of the program, methodical recommendations for conducting training sessions, presentation of projects); organization of the system of educational events aimed at the formation of pedagogical skills; involvement of students in the use of interactive technologies; the formation of pedagogical thinking, pedagogical experience in the process of passing various types of pedagogical practice.

The third – the effective and regulatory stage of the of pedagogical mastery formation – envisaged the monitoring of the formation of students' pedagogical skills, analysis of experimental work; determining the ratio of goals and tasks to the results of the experiment and determining the range of problems that require further research. Structural components of pedagogical mastery (according to N. Kuzmina) are:

1. Gnostic – research, which involves the continuous increase of knowledge, skills and abilities. This is the ability to explore the process and the result of one' own work. This part of the teacher's activity is most valued by senior pupils.

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2. Constructive – pedagogical activity planning and forecasting the results. This part of the teacher's activity is most valued by adolescents.
3. Designing – designing prospective goals of education and training, as well as strategies and ways to achieve them.
4. Organizational – the organization of the educational process.
5. Communicative – establishing a relationship between the teacher and students [5, p. 48].

In the course of the experiment the following criteria of pedagogical mastery of teachers of humanities are defined: formation of scientific and theoretical knowledge; mastering the practical skills and abilities; optimality of content, methods, techniques, and means of training selection; the presence of humanity, democracy and dialogue in communication; effective leadership of the students' educational and cognitive activities.

There are three levels of mastery: reproductive, reconstructive and creative levels.

The reproductive level is typical for students oriented to the standard of pedagogical activity, which seeks to preserve and maintain teaching skills. The decisive feature of the future teacher with such a level is his ability to teach others in the same way that he was taught.

The reconstructive level of mastery involves the achievement of a positive result of teaching by learning and looking for something new, which is already being implemented somewhere by someone. Future teachers, working at this level of quality, reflect better their individuality in pedagogical activity, and they are characterized by a benchmark for norms of individual progress. The student masters the strategies for the necessary system of knowledge, skills and abilities formation from their subject in general.

The creative level is oriented to the norms, and ideals that set the perspective goals in this type of activity and its individual rules. It is typical for future teachers who are engaged in research work, to have their own teaching methods and be constantly in the creative search. The student has strategies for transforming his subject into a means of forming the students' personality, and their needs of self-education and self-development.

During the research such result was carried out – the formed pedagogical mastery of future teachers of the humanities. Note that this result is possible only when the overwhelming majority of students have a creative and reconstructive level of pedagogical mastery.

The highest level (creative) of pedagogical skills is provided if a person's pedagogical mastery is considered a value category.

The proposed model reflects the complex implementation of all the pedagogical conditions and components of the future teachers of humanities education identified in the research using interactive technologies at higher educational establishments.

5. Organization and method of conducting an experiment on the future teachers' pedagogical mastery formation

At the stage of constataion of the research, 379 students participated. According to the results, it is determined that 80% of graduates are at the middle and low levels of the pedagogical mastery formation. This led to a plan of research at the formative stage of the experiment.

In the formative stage of the study 115 students participated (57 people – experimental group (EG), 58 people – control group (CG)), 8 teachers of Regional Humanitarian and Pedagogical Academy of Taras Shevchenko in Kremenets and Yuriy Fedkovych Chernivtsi National University.

On the basis of the experimental research analysis, by observation observation of students of EG and CG, the formation of levels of pedagogical mastery was determined. The levels of formation of each component of future teachers pedagogical mastery in the CG and EG were determined at the input and final stages. For mathematical calculations in order to prove the probability of the results obtained, each of the three levels of the of pedagogical mastery formation was marked on a 5-point scale.

In the process constataional and forming stages of the experiment, no students were found who have no pedagogical skills at all. In order to compare the overall level of pedagogical skills and its components, the average rate (AR) was used for students of CG and EG. The reliability and probability of the obtained results were verified and confirmed using the methods of mathematical statistics, by defining and comparing the F-criterion in the CG and EG with standard indicators.

During the formative stage of the experiment, the following changes took place in the pedagogical mastery formation of future teachers: according to high level index, the number of students of CG increased by 3,44%; in the EG students this figure increased by 38,6%. According to the low level indicators in both groups a decrease in the number of students was noticed: CG – by 8,61%, and EG – by 14,04%. The determined indexes of

readiness levels for the future teachers of the humanities are presented in Table 1.

Consequently, the results of the conducted research indicate that the effectiveness of forming the pedagogical mastery of future teachers of the humanities using interactive technologies depends on the purposeful and integrated introduction into the educational process of a set of outlined pedagogical conditions, structural and functional models and developed and proposed author's teaching methodologies.

Table 1

The dynamics of the of the pedagogical mastery formation of future teachers of the humanities

Groups	Kontrol stage	Number of students and levels of formation of pedagogical skills						R
		Creative		Reconstructive		Reproductive		
		St.	%	St.	%	St.	%	
CG 58 st.	Imput	11	18,97	24	41,38	23	39,65	3,8
	Final	13	22,41	27	46,55	18	31,04	3,9
EG 57 st.	Imput	10	17,54	23	40,35	24	42,11	3,8
	Final	32	56,14	9	15,79	16	28,07	4,3

The results obtained during the experimental verification of our proposed methodology are a confirmation of its effectiveness and feasibility of introducing into the educational process of higher educational institutions.

6. Conclusions

The study makes it possible to state the following:

1. The state of research of the problem has been analyzed, the essence of the main definitions of the research (professional competence, pedagogical skills) has been determined, and features of the process of professional training of future teachers of humanities have been identified.

2. Pedagogical conditions of application using interactive technologies in future teachers of humanitarian subject education have been identified and theoretically grounded.

3. The components have been refined, and the criteria and indicators of the pedagogical mastery formation of future teachers of humanities have been improved.

4. The effectiveness of the model of pedagogical mastery formation of future teachers has been developed and experimentally tested using interactive technologies.

The research does not exhaust all aspects of the problem of pedagogical mastery formation of future teachers of humanities using interactive technologies. The prospects of further scientific research are seen in the study of this process in foreign theory and practice and students with a low level of pedagogical skills.

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**THE DEVELOPMENT OF COGNITIVE ACTIVITY
OF FUTURE COMPUTER SCIENCE TEACHERS
IN THE MATHEMATICAL TRAINING PROCESS:
THEORETICAL ASPECT**

**РОЗВИТОК ПІЗНАВАЛЬНОЇ АКТИВНОСТІ
МАЙБУТНІХ УЧИТЕЛІВ ІНФОРМАТИКИ В ПРОЦЕСІ
МАТЕМАТИЧНОЇ ПІДГОТОВКИ: ТЕОРЕТИЧНИЙ АСПЕКТ**

Fomenko Larisa¹
Kharkivska Alla²

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Abstract. The article deals with the problem of the development of cognitive activity of future computer science teachers. It is focused on the need to rethink the tasks and the content of their professional training in connection with the informatization of all spheres of human activity, including education. The importance of the development of cognitive activity of future computer science teachers is emphasized. It is suggested using the potential of mathematical training as a component of professional training for its development. The purpose of the research was to determine the theoretical foundations of the development of cognitive activity of future computer science teachers in the process of mathematical preparation, namely, the specification of the essence and definition of the structure of cognitive activity of future computer science teachers, the emphasizing of methodological approaches, principles and functions of its development.

On the basis of the analysis of scientific literature, it came to the conclusion that at present there is no single approach to the definition of the essence and structure of cognitive activity of future computer science teachers. In the process of the research, a definitive and structural analysis of

¹ Postgraduate Student of Creative Pedagogy and Intellectual Property Chair, Ukrainian Engineering Pedagogical Academy, Ukraine

² Doctor of Pedagogical Sciences, Professor, Vice-rector for Scientific and Pedagogical Work, Municipal Establishment Kharkiv Humanitarian-Pedagogical Academy of Kharkiv regional council, Ukraine

the notion “cognitive activity of the future computer science teacher” was done. On the basis of it the cognitive activity of the future computer science teacher as a personality quality was determined. It contributes to effective preparation for the implementation of vocational and pedagogical activities, which is aimed at forming students informational culture and basic competencies in the field of digital technologies, implementation of digital technologies in educational process of educational institutions. It appears in a positive attitude to the content and process of learning, the intention to self-education, self-improvement, creative growth throughout life in order to succeed self-realization. In the structure of cognitive activity of future computer science teachers, the motivational, operational-research and personality-reflection components that exist in unity are singled out.

The development of cognitive activity of future computer science teachers is understood as the conscious process of raising of the cognitive activity level of students, as a result of which there is a change of investigated quality, which manifests itself in positive changes in the motivational, operational-research and personality-reflection components, and promotes effective gaining of professionally important knowledge and skills of their use in pedagogical activities.

In organizing the development of cognitive activity of future computer science teachers in the process of mathematical training, one must adhere to the principles of systematic, personal-activity and informational methodological approaches; use the general didactic guidelines, especially the principles of fundamentalization of education, orientation of mathematical training for future professional activity, individual approach and subject-subject interaction between teacher and students, problem-solving, cognitive visualization; rely on motivational, gnostic, integrative and reflective functions of the development of cognitive activity of future computer science teachers in the process of mathematical training.

1. Вступ

Одним із актуальних завдань загальної середньої освіти є підготовка підростаючого покоління до життя в інформаційному суспільстві, що обумовлено стрімким розвитком інформаційних технологій, інформатизацією та глобалізацією практично усіх сфер людської діяльності, впровадженням інформаційно-комунікаційних технологій в освітній процес. Ключову роль у виконанні цього завдання відіграє

вчитель інформатики, який має забезпечувати високу якість інформаційної освіти учнів закладів загальної середньої освіти.

Реалії сучасної вищої педагогічної освіти вказують на зниження престижу педагогічної професії, низький рівень підготовки абітурієнтів, які вступають до педагогічних вишів, небажання студентів до самоосвіти, саморозвитку, невміння самостійно отримувати знання, спрямовувати власну діяльність на подолання труднощів, що виникають в освітньому процесі, інтелектуальну пасивність студентів тощо. Вищезазначене вимагає від системи національної педагогічної освіти переосмислення завдань і змісту професійної підготовки майбутнього вчителя інформатики, здатного провадити ефективну професійно-педагогічну діяльність, орієнтуватися у надто мінливому інформаційному просторі, відстежувати тенденції розвитку цифрових технологій, опановувати нові програми та сервіси, керувати власним розвитком, проявляти активність і самостійність, творчо застосовувати отримані знання у професійній діяльності й передавати ці знання дітям, допомагати колегам під час впровадження нових цифрових технологій в освітній процес.

Одним із шляхів удосконалення процесу підготовки майбутніх учителів інформатики є розвиток пізнавальної активності, що зумовлює активізацію навчально-пізнавальної діяльності особистості, вмотивованість і цілеспрямованість такої діяльності, сприяє самоосвіті, професійному зростанню, мобільності й конкурентноспроможності фахівців на ринку праці.

Проблема формування й розвитку пізнавальної активності особистості завжди привертала увагу науковців і практиків. Психологічні аспекти проблеми висвітлено у працях К. Абульханової-Славської, Л. Божович, Л. Виготського, П. Гальперіна, О. Леонтьєва, С. Рубінштейна, Н. Талізінної та ін.; питання формування й розвитку активності у навчанні досліджували Л. Аристова, Ю. Бабанський, І. Лернер, В. Лозова, М. Махмутов, Н. Половнікова, М. Скаткін, І. Харламов, Т. Шамова, Г. Щукіна та ін. Аналіз наявних досліджень у галузі професійної педагогіки показав, що актуальним є питання розвитку пізнавальної активності студентів у процесі навчання (П. Лузан, О. Пиндик, В. Рахманов, Т. Темерівська, О. Федик, Т. Хоменко та ін.), у тому числі, й майбутніх учителів (Т. Алексеєнко, О. Єгорова, Л. Левчук, В. Молчанова, К. Сапашева, Д. Соменко та ін.).

Проте, процеси інформатизації та глобалізації усіх сфер людської діяльності висувають проблему розвитку пізнавальної активності на якісно новий рівень, що обумовлено постійним збільшенням обсягів інформації та недостатнім рівнем підготовленості особистості до опрацювання значної кількості інформації та її використання у професійній діяльності. Наразі виникає питання, яким чином в умовах збільшення обсягу самостійної роботи студентів, інформатизації суспільства й освіти здійснювати розвиток пізнавальної активності майбутніх учителів інформатики на рівні, що забезпечить ефективну навчально-пізнавальну й подальшу професійну діяльність майбутніх фахівців.

Мета дослідження полягає у визначенні теоретичних основ розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки. Відповідно до сформульованої мети визначені завдання дослідження: уточнити суть поняття «пізнавальна активність майбутніх учителів інформатики»; визначити структуру пізнавальної активності майбутніх учителів інформатики; виокремити методологічні підходи, принципи й функції розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки.

Під час наукового дослідження для вирішення поставлених завдань використовувалися методи дослідження: аналіз, співставлення, узагальнення філософської, психолого-педагогічної та методичної літератури з метою уточнення суті поняття «пізнавальна активність майбутнього вчителя інформатики», визначення її структури, виокремлення методологічних підходів, принципів і функцій розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки.

2. Суть поняття «пізнавальна активність майбутнього вчителя інформатики»

Науковці все більше уваги приділяють питанням формування й розвитку пізнавальної активності майбутнього вчителя. Серед цих питань важливе місце займає визначення суті поняття «пізнавальна активність майбутнього вчителя». Проаналізувавши тлумачення зазначеного поняття, запропоновані науковцями, приходимо до висновку, що єдиної думки серед науковців немає. Більшість дослідників пов'язує пізнавальну активність майбутнього вчителя з особистістю, визна-

чаючи її як якість (Л. Левчук [10], А. Мельнік [12]), рису (О. Соменко [24]), утворення (Д. Соменко [23]) особистості. На протипагу їм, деякі науковці розглядають пізнавальну активність майбутнього вчителя в контексті діяльності, стверджуючи, що пізнавальна активність є показником, характеристикою навчально-пізнавальної діяльності (В. Молчанова [13], В. Ребенок [19]) або продуктивною діяльністю (О. Портяна [18]). Т. Гладюк [4] і Л. Сливка [22] розглядають пізнавальну активність і як якість навчально-пізнавальної діяльності, і як якість особистості.

Науковці (В. Молчанова [13], Л. Сливка [22], О. Соменко [24] та ін.) акцентують увагу на орієнтації пізнавальної активності майбутнього вчителя до отримання знань і вмінь, необхідних для ефективного здійснення педагогічної діяльності.

Підтримуючи думку названих науковців, вважаємо за потрібне, звернути увагу на особливості професійної підготовки майбутніх учителів.

Згідно із «Галузевою концепцією розвитку неперервної педагогічної освіти» [1] зміст професійної підготовки майбутніх учителів у закладах вищої педагогічної освіти передбачає *фундаментальну* (вивчення теоретичних основ спеціальності), *психолого-педагогічну* (складає основу професійної підготовки педагога і передбачає формування глибоких людинознавчих знань, комунікативних вмінь та компетенцій у сфері людських відносин), *методичну* (глибоке опанування методиками викладання навчальних предметів з використанням можливостей інформаційно-комунікаційних технологій та методик проведення позашкільної і позакласної роботи.), *інформаційно-комунікаційну* (вивчення основ інформатики, новітніх інформаційно-комунікаційних технологій та методик їх застосування у навчальному процесі і здійснюється протягом усього строку навчання.), *практичну* (проходження неперервних навчальних та виробничих (педагогічних) практик, починаючи з третього семестру) і *соціально-гуманітарну* (поглиблення та професіоналізацію мовної, філософської, політологічної, культурологічної, соціологічної, правознавчої, економічної, фізкультурно-оздоровчої освіти та її професійно-педагогічне спрямування.) підготовку.

Спираючись на результати проведеного аналізу дефініції поняття «пізнавальна активність майбутнього вчителя» та особливості профе-

сійної підготовки майбутніх учителів, будемо розуміти пізнавальну активність майбутнього вчителя як якість особистості, що сприяє ефективній підготовці до здійснення професійно-педагогічної діяльності; виявляється у позитивному ставленні до змісту й процесу навчання, прагненні до самоосвіти, самовдосконалення, творчого зростання впродовж життя.

Під час аналізу науково-педагогічних джерел ми не виявили дефініції поняття «пізнавальна активність майбутнього вчителя інформатики». Тому для його визначення будемо спиратися на уточнене поняття «пізнавальна активність майбутнього вчителя» й урахуємо особливості професійної підготовки та професійної діяльності майбутніх учителів інформатики.

Професійна підготовка майбутніх учителів інформатики у закладах вищої педагогічної освіти здійснюється на підставі освітньої програми підготовки бакалаврів галузі знань 01 Освіта зі спеціальності 014.09 Середня освіта (Інформатика) [15, 16, 17], в якій визначено нормативний зміст підготовки здобувачів вищої освіти, сформульований у термінах результатів навчання.

Фахівці цієї галузі мають демонструвати знання з основних розділів інформатики; знати методи розробки та дослідження алгоритмів розв'язування задач з інформатики; володіти мовами програмування різних видів; використовувати інформаційно-комунікаційні технології для подання, редагування, збереження та перетворення текстової, числової, графічної, звукової та відео інформації; планувати та організовувати процес навчання учнів інформатики, застосовувати сучасні методи навчання і форми організації навчально-пізнавальної діяльності учнів; обирати та застосовувати методичне і дидактичне забезпечення шкільного курсу інформатики; здійснювати об'єктивну діагностику навчальних досягнень, контроль та оцінювання результатів навчальної діяльності учнів; застосовувати цифрові технології на уроці, у позакласній і позашкільній роботі; організувати діяльність учнів на уроці із дотриманням правил і рекомендацій щодо здоров'язбереження школярів; впроваджувати засоби й методи захисту інформації та безпеки в мережі Інтернет; володіти державною мовою та однією з поширених іноземних мов для використання зарубіжного досвіду в професійній діяльності; вчитися впродовж життя; самостійно вивчати нові питання інформатики та методики

навчання інформатики; володіти основами професійної мовленнєвої культури й адекватно поводитися в медіа-інформаційному середовищі [15, 16, 17].

Дотримання зазначених вимог під час професійної підготовки майбутніх учителів інформатики в закладах вищої педагогічної освіти дозволить підготувати висококваліфікованих спеціалістів для закладів освіти, які здатні організувати процес вивчення інформатики та цифрових технологій, ефективно й доцільно використовувати цифрові технології в освітньому процесі та управлінні закладами освіти, розробляти й удосконалювати програмне та інформаційне забезпечення навчального призначення, прагнуть подальшого саморозвитку, професійного зростання.

Зазначимо, що професійна діяльність вчителя інформатики дещо відрізняється від діяльності учителів інших навчальних предметів, оскільки йому потрібно постійно відслідковувати й опанувати нові цифрові пристрої, орієнтуватися в часто оновлюваних навчальних програмах з інформатики, консультувати колег щодо використання цифрових технологій в освітньому процесі, слідкувати за безпекою використання інформаційних ресурсів. Також необхідно зважати, що основним видом діяльності учнів на уроці інформатики є практична діяльність з індивідуальним доступом кожного учня до роботи з персональним комп'ютером, а в змісті уроку потрібно використовувати проблемно орієнтовані завдання, які стимулюють дискусію, обговорення, пошук різних джерел інформації, зіткнення думок і переконань, пов'язувати зміст уроку з реальним життям, демонструвати практичну значущість інформації.

Отже, зважаючи на особливості професійної підготовки та професійної діяльності майбутніх учителів інформатики, будемо трактувати пізнавальну активність майбутнього вчителя інформатики як якість особистості, що сприяє ефективній підготовці до здійснення професійно-педагогічної діяльності, яка спрямована на формування в учнів інформаційної культури та базових компетентностей у галузі цифрових технологій, впровадження цифрових технологій в освітній процес закладів освіти; виявляється у позитивному ставленні до змісту й процесу навчання, прагненні до самоосвіти, самовдосконалення, творчого зростання впродовж життя з метою успішної самореалізації.

3. Структура пізнавальної активності майбутніх учителів інформатики

Ураховуючи неоднозначність і багатоаспектність поняття «пізнавальна активність», вважаємо за потрібне визначити структуру пізнавальної активності майбутнього вчителя інформатики, проаналізувавши наявні концепції щодо структурного складу пізнавальної активності майбутніх учителів, які вважаємо найбільш доцільними.

Так, О. Єгорова [6, с. 18], вивчаючи проблему розвитку пізнавальної активності майбутніх учителів гуманітарних дисциплін у процесі науково-дослідної роботи, визначила структуру пізнавальної активності як сукупність мотиваційного, операційного й дослідницького компонентів, які є взаємо-пов'язаними та взаємозумовленими в навчально-пізнавальній діяльності. Однак, авторка не приділила достатньої уваги самоконтролю й самоорганізації, як складових пізнавальної активності, що на нашу думку є її невід'ємною частиною.

Т. Гладюк [4] і Л. Сливка [22] у структурі пізнавальної активності майбутніх учителів початкових класів під час вивчення окремих дисциплін виокремили мотиваційно-ціннісний, когнітивний і операційно-діяльнісний компоненти, що існують в єдності. Але суть кожного з компонентів розкрита на основі вивчення лише одного окремого предмета, а пізнавальна активність спрямована на забезпечення якісного засвоєння знань і умінь із цього предмета, що не забезпечує її прояву в процесі вивчення інших предметів, визначених освітньою програмою підготовки вчителів початкових класів.

Д. Соменко [23, с. 152], досліджуючи проблему розвитку пізнавальної активності студентів педагогічних університетів у процесі навчання фізики з використанням інформаційно-комунікаційних технологій, виділив три основні компоненти: мотиваційний, операційно-діяльнісний, дослідницько-професійний. Проте автор не приділив належної уваги формуванню вмінь студентів щодо роботи з інформацією, аналітичних і дослідницьких умінь як важливих складових пізнавальної активності.

Проаналізувавши запропоновані дослідниками набори структурних компонентів пізнавальної активності й ураховавши особливості професійної діяльності вчителів інформатики, ми виділили три основні компоненти пізнавальної активності майбутніх учителів інформатики: мотиваційний, операційно-дослідницький, особистісно-рефлексійний, що в єдності становлять цілісну структуру пізнавальної активності.

Мотиваційний компонент пізнавальної активності майбутніх учителів інформатики розкривається через потреби, мотиви, інтереси та цілі, що орієнтують студентів на професію, спонукають їх до опанування новими професійними знаннями в галузі цифрових технологій, нових методик навчання інформатики, що постійно оновлюються й удосконалюються, уміннями й навичками у відповідній предметній галузі, професійно значущими якостями та здібностями; спрямований на збереження й неперервний розвиток такої активності в процесі навчання у закладах вищої педагогічної освіти й на всіх етапах пізнання в подальшій професійній діяльності.

Операційно-дослідницький компонент пізнавальної активності майбутніх учителів інформатики характеризується сукупністю знань та вмінь студентів про способи пошуку, отримання, опрацювання, зберігання та використання студентами професійно важливої інформації, використовуючи цифрові технології; умінь аналізувати, синтезувати, виділяти головне, проявляти самостійність у процесі пізнавальної діяльності, підходити творчо до виконання професійних завдань, виявляти проблеми й висувати гіпотези, формулювати висновки; презентувати результати своєї діяльності за допомогою сучасних програмних засобів; наявністю інтелектуальних, аналітичних, організаційних, дослідницьких умінь, логічного та критичного мислення.

Особистісно-рефлексійний компонент пізнавальної активності майбутніх учителів інформатики включає: знання студентів про власні особливості, що проявляються в процесі пізнання; процес саморегуляції власної діяльності й поведінки майбутніх фахівців, що проявляється як усвідомлене прагнення особистості до отримання нових знань та вмінь стосовно цифрових технологій та їх використання в освітньому процесі; самоконтроль, самооцінку, вміння контролювати, аналізувати й оцінювати способи й результати своєї діяльності; захопленість, рішучість, наполегливість, прагнення до групування сил для подолання труднощів, що виникають у пізнавальній діяльності; позитивне ставлення до процесу пізнання й професійної діяльності.

4. Зміст поняття «розвиток пізнавальної активності майбутніх учителів інформатики»

Для того, щоб найефективнішим способом організувати процес розвитку пізнавальної активності майбутніх учителів інформатики,

необхідно чітко визначити зміст конструкту «розвиток пізнавальної активності майбутніх учителів інформатики».

О. Єгорова визначає поняття «розвиток пізнавальної активності особистості» як усвідомлену спрямовану позитивну зміну пізнавальної активності, у процесі якої розгортаються внутрішні можливості особистості, при цьому зміна пізнавальної активності повинна мати достатньо регулярний характер [6, с. 26]. О. Самофалова наголошує на тому, що «розвиток пізнавальної активності є невід’ємною складовою навчально-пізнавальної діяльності, а також необхідною умовою розвитку особистості студента не тільки як майбутнього фахівця, але як високоосвіченої, інтелектуально розвиненої особистості, яка здатна стати суб’єктом діяльності та керувати власним розвитком з урахуванням загальнолюдських цінностей, вимог суспільства й власних інтересів» [20, с. 63].

Підтримуємо думку Т. Гладюк, що розвиток пізнавальної активності майбутніх фахівців залежить від змісту професійної підготовки, що зумовлюється цінностями й сутністю професійної діяльності, загальною метою підготовки, вимогами споживачів освітніх послуг [3, с. 108].

Отже, під розвитком пізнавальної активності майбутніх учителів інформатики будемо розуміти усвідомлений процес підвищення рівня пізнавальної активності студентів, внаслідок якого відбувається зміна досліджуваної якості, що проявляється в позитивних змінах мотиваційного, операційно-дослідницького й особистісно-рефлексійного компонентів, й сприяє ефективному здобуттю професійно важливих знань і вмінь та навичок їх використання у педагогічній діяльності.

5. Математична підготовка як складова професійної підготовки майбутніх учителів інформатики

Майбутні учителі інформатики під час навчання у закладах вищої педагогічної освіти, згідно з освітньою програмою підготовки бакалаврів галузі знань 01 Освіта зі спеціальності 014.09 Середня освіта (Інформатика) [15; 16; 17], мають засвоїти цикл навчальних дисциплін гуманітарної та соціально-економічної, психолого-педагогічної, фундаментальної й природничо-наукової, професійної та практичної підготовки, оволодіти знаннями в області обраного фаху та вміннями їх застосування у професійно-практичній діяльності.

Важливою складовою підготовки майбутніх учителів інформатики у закладах вищої педагогічної освіти виступає математична підготовка, яка сприяє підвищенню рівня їх загальнолюдської культури, інтелектуальному розвитку, зокрема розвитку логічного, алгоритмічного й абстрактного мислення, самостійності та творчої ініціативи, формуванню наукового світогляду й розвитку дослідницьких здібностей тощо.

Можливості математичної підготовки будемо використовувати для розвитку пізнавальної активності майбутніх учителів інформатики, оскільки методи й засоби пізнання, які використовуються в математиці є універсальними, можуть бути використані студентами як під час вивчення інших предметів, так і в педагогічній діяльності.

6. Теоретичні основи розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки

Під час вивчення проблем пізнання та практики універсальним інструментом виступає діалектика, як метод пізнання реальної дійсності, в основу якого було покладено зв'язок теорії та практики, принципи пізнаваності реального світу, детермінованості явищ, взаємодії зовнішнього і внутрішнього, об'єктивного й суб'єктивного.

Використання діалектичного методу пізнання, в рамках дослідження порушеної, проблеми дозволило об'єктивно визначити й оцінити наявні суперечності та запропонувати шляхи їх подолання на основі досвіду й фактів, як джерела пізнання дійсності, взаємозв'язку, взаємозумовленості й цілісності явищ у природі та довести правильність і дієвість наведених теоретичних міркувань завдяки практичному їх застосуванню, враховуючи, що практика є критерієм істинності теорії.

В. Лозова, досліджуючи проблему формування пізнавальної активності школярів, наголошує на доцільності застосування цілісного підходу під час вивчення окресленої проблеми, який обумовлює необхідність дослідження тих механізмів, які забезпечують формування пізнавальної активності; умов, які визначають ефективність цього процесу; засобів впливу на формування пізнавальної активності особистості й шляхів коригування цих впливів; форм взаємозв'язків і взаємовпливів пізнавальної активності особистості у різних видах діяльності [11, с. 41-42].

Проте, І. Зязюн звертає увагу на «всезагальність цілісного підходу в усій системі методологічних регулятивів педагогічного дослідження, проектування і конструювання педагогічних об'єктів і процесів» і пропонує використовувати цілісний підхід в процесі здійснення всіх інших підходів, вважаючи його «метапідходом, метарегулятивом (система регулятивів), реалізація якого важлива для ефективності повноцінного здійснення особистісного, системного, діяльнісного, синергетичного, культурологічного, компетентнісного і всіх інших підходів» [7, с. 44].

Послугуючись наведеними вище положеннями щодо застосування цілісного підходу до формування пізнавальної активності особистості, застосуємо його як метапідхід, що забезпечить ефективність використання системного, особистісно-діяльнісного та інформаційного підходів до розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки.

Використання системного підходу в процесі дослідження дозволяє розглядати пізнавальну активність майбутніх учителів інформатики як цілісну систему, виокремити в її структурі мотиваційний, операційно-дослідницький та особистісно-рефлексійний компоненти, виявити зв'язки між цими компонентами; визначити основні фактори (зовнішні та внутрішні), які впливають на розвиток пізнавальної активності; оцінити місце пізнавальної активності як підсистеми системи вищого рівня – особистості; визначити цілі, зміст, завдання, способи, засоби розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки.

Розглядаючи пізнавальну активність як складову системи вищого рівня – особистості й урахувуючи, що особистість розвивається в діяльності, вважаємо доцільним використання особистісно-діяльнісного підходу в процесі дослідження. Це дозволить організувати освітню діяльність із урахуванням індивідуальних особливостей кожного окремого студента, створити умови для розвитку й саморозвитку особистості, забезпечити партнерські суб'єкт-суб'єктні стосунки між педагогом і студентом у процесі діяльності, розробити оптимальну систему розвитку пізнавальної активності студентів. Важливо під час розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки врахувати, що первинними є не знання та їх запам'ятовування, а сформовані на основі знань способи дій та навички їх використання у професійній діяльності. Тому,

головна роль педагога полягає в стимулюванні студентів до самостійного пошуку й переробки інформації, використовуючи сучасні цифрові технології, вибору форм і видів навчально-пізнавальної діяльності, що забезпечать ефективне провадження професійної діяльності.

У рамках дослідження проблеми розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки важливим є інформаційний підхід, згідно з яким «інформація стає головним ресурсом науково-технічного й соціально-економічного розвитку, конструктивним фактором у процесі підготовки вчителя» [8].

У діяльності вчителя інформатики інформація та новітні цифрові техно-логії набувають особливого значення, оскільки не лише сприяють ефективній підготовці до професійної діяльності, а й виступають предметом діяльності. Тому вважаємо за потрібне під час розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки звернути особливу увагу на опануванні студентами способами одержання, обробки й передачі інформації, аналітико-синтетичної переробки, узагальнення й систематизації інформації про різні математичні об'єкти, використання цифрових технологій для візуалізації математичних об'єктів, проведення розрахунків тощо.

За логікою нашого дослідження, наступним етапом необхідно визначити принципи розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки – вихідні положення, які відображають об'єктивні закономірності цього процесу й слугують основою, якою треба керуватися під час визначення змісту, форм, методів, засобів організації освітнього процесу, що приводить до реалізації поставленої мети.

Під час розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки будемо дотримуватись загальнодидактичних принципів. Однак, вважаємо, що особливого значення набуває запровадження в цей процес таких принципів, як-от: фундаменталізації освіти майбутніх учителів інформатики, орієнтації математичної підготовки на майбутню професійну діяльність, індивідуального підходу та суб'єкт-суб'єктної взаємодії між викладачем і студентами, проблемності, когнітивної візуалізації.

Принцип фундаменталізації освіти майбутніх учителів інформатики передбачає орієнтацію освітнього процесу на отримання студентами інваріант-них, методологічно важливих, довготривалих, систем-

них знань, які сприяють цілісному сприйманню наукової картини світу, інтелектуальному розвитку особистості, творчій самореалізації, розширенню можливостей адаптації фахівців до надто мінливих соціально-економічних і технологічних умов; формування механізмів пізнання й основ розуміння процесів і явищ навколишнього світу, здатності творчо застосовувати на практиці найновіші досягнення сучасної науки та техніки; формування внутрішньої потреби до саморозвитку й самоосвіти, що є необхідною умовою забезпечення конкурентоспроможності й мобільності майбутніх спеціалістів. Згідно із цим принципом, ми обрали математичну підготовку, як основу для розвитку пізнавальної активності майбутніх учителів інформатики, що дозволить використовувати набуті студентами під час математичної підготовки фундаментальні знання й уміння в процесі вивчення інших дисциплін та професійній діяльності.

Принцип орієнтації математичної підготовки на майбутню професійну діяльність полягає в органічному поєднанні теоретичної підготовки майбутніх учителів інформатики та практики, забезпеченні розуміння студентами користі отриманих знань для розв'язання професійно-практичних завдань, що сприяє активному засвоєнню навчального матеріалу, виробленню умінь застосовувати набуті знання в практичній діяльності. Реалізація принципу можлива як під час навчальних занять, так і під час педагогічної практики й самостійної роботи студентів. Процес розвитку пізнавальної активності буде ефективнішим, якщо студенти будуть розуміти й усвідомлювати, для чого їм потрібно опановувати навчальний матеріал з предметів математичного циклу, яким чином вони можуть застосувати отримані знання в подальшій професійній діяльності.

Принцип індивідуального підходу та суб'єкт-суб'єктної взаємодії викладача і студентів у процесі математичної підготовки майбутніх учителів інформатики передбачає врахування в освітньому процесі вікових та індивідуальних особливостей кожного студента з метою максимального розвитку позитивних і подолання негативних індивідуальних особливостей, забезпечення на цій основі всебічного розвитку особистості. Дотримання цього принципу в процесі розвитку пізнавальної активності майбутніх учителів інформатики дозволить обрати такі форми, методи та засоби педагогічного впливу, які б максимально відповідали реальним пізнавальним можливостям студентів і забезпечували б розви-

ток кожного окремого студента в умовах колективної навчальної роботи з урахуванням їхніх індивідуальних здібностей, нахилів, інтересів.

Неабияке значення в реалізації принципу індивідуального підходу в освітньому процесі, який орієнтований на отримання особистістю освіти впродовж життя, відіграє система відносин студента й викладача. Погоджуючись із думкою В. Володько та С. Гончаренка [5], вважаємо, що необхідно замінити систему суб'єкт-об'єктних відносин на систему суб'єкт-суб'єктних відносин під час математичної підготовки майбутніх учителів інформатики, в якій студент як суб'єкт освіти буде разом із засвоєнням математичних знань розвивати в собі здатність, навички й уміння самостійно їх шукати, оволодівати науковими методами пізнання, а викладач допомагатиме студентам навчатись, урахувавши індивідуальні особливості кожного з них, визначаючи час, темп навчання, зміст, методи, прийоми, засоби, форми навчальної роботи, форми контролю тощо.

Принцип проблемності передбачає включення майбутніх учителів інформатики до спеціально розробленої системи проблем і проблемних завдань у процесі математичної підготовки, що потребують від студентів творчої діяльності на доступному їм рівні.

Проблемне навчання математичних дисциплін сприятиме інтелектуальному розвитку майбутніх учителів інформатики, формуванню здатності самостійно побачити та сформулювати проблему, висунути гіпотезу й віднайти спосіб її перевірки, сформулювати висновки й визначити можливості практичного застосування отриманих результатів, здійснювати самоаналіз і самокорекцію.

Слід зазначити, що проблемне навчання має значний вплив на мотиваційну сферу особистості. Проблема викликає внутрішню зацікавленість студента, що стає чинником активізації освітнього процесу та ефективності навчання.

Отже, дотримання принципу проблемності в процесі математичної підготовки майбутніх учителів інформатики дозволить організувати освітній процес, в якому пізнавальна активність проявляється й розвивається найефективніше.

Принцип когнітивної візуалізації. Когнітивна візуалізація – це, перш за все, візуалізація, яка не лише дозволяє проілюструвати навчальну інформацію, а й сприяє природно-інтелектуальному процесу здобуття нових знань, виявленню студентами ще не відомих їм

закономірностей, властивостей, специфічних рис об'єктів та явищ, що розглядаються [25]. О. Семеніхіна й М. Друшляк наголошують, що використання принципу когнітивної візуалізації передбачає розкриття пізнавальних цілей через виважене пізнавальне унаочнення навчального матеріалу завдяки візуальним акцентам (колір, товщина ліній, певні позначки тощо), що дає змогу представити основні ідеї, поняття та їх властивості і сприяє узагальненню та систематизації знань про цілі класи об'єктів. Автори вважають цей принцип одним із провідних у підготовці вчителя інформатико-математичного профілю, оскільки орієнтує у майбутній професійній діяльності на формування умінь унаочнювати складні поняття й конструкції, демонструвати зв'язки між їх елементами, надавати числові характеристики, візуально спростовувати чи емпірично підтверджувати певні факти [21].

Використання принципу когнітивної візуалізації в процесі математичної підготовки майбутніх учителів інформатики сприятиме розвитку пізнавальної активності студентів, виробленню вмінь систематизувати, узагальнювати й застосовувати набуті професійні знання в практичній діяльності шляхом створення візуальних моделей математичних об'єктів, опорних конспектів як окремих тем з курсу математики, так і цілих розділів, інтелект-карт тощо, а застосування нових цифрових технологій для цього дозволить інтегрувати математичну й інформатичну підготовку майбутніх фахівців.

Дотримання зазначених принципів в процесі математичної підготовки майбутніх учителів інформатики сприятиме підвищенню рівня їх пізнавальної активності, а також виступатиме підґрунтям для подальшого визначення функцій цього процесу.

В традиційній педагогіці найчастіше визначають освітню, розвивальну та виховну функції процесу навчання, які тісно пов'язані між собою, а реалізація однієї з них обов'язково зумовлює реалізацію певних аспектів іншої. Освітня функція має забезпечити засвоєння суб'єктами навчання системи наукових знань, формування вмінь і навичок, тих чи інших компетентостей. Сутність розвивальної функції полягає в розвитку учнів та студентів в процесі навчання, зокрема розвитку мислення, формуванню волі, емоційного інтелекту, навчальних інтересів, мотивів і здібностей. Виховна функція орієнтує процес навчання на формування наукового світогляду учнів та студентів, вихованню відповідального ставлення до життя й до самих себе [26, с. 85-89].

Проте, останнім часом науковці доповнюють цей набір функцій, зосере-джуючи увагу на тому чи іншому аспекті освітнього процесу. Оскільки наше дослідження пов'язане із професійною підготовкою майбутніх учителів інформатики, розглянемо функції, запропоновані науковцями в означеній галузі.

Так, В. Гладуш і Г. Лисенко зазначають, що педагогіка вищої школи має забезпечити реалізацію освітньої, науково-пізнавальної, спонукальної, перетворювальної, прогнозувальної, проєктивної, культурологічної, адаптивної, формувально-виховної та формувально-професійної функцій [2, с. 13].

А. Кравченя виділила такі функції професійної підготовки майбутніх учителів інформатики: організаційно-інформаційну, мотиваційну, розвивально-комунікаційну й аналітично-дослідницьку, які реалізуються через інтеграцію сучасних інформаційно-комунікаційних і педагогічних технологій, методів, форм і засобів навчання [9, с. 51-52].

Досліджуючи процес формування інтелектуальних умінь майбутніх учителів інформатики у процесі вивчення природничо-математичних дисциплін», І. Морквян вважає, що необхідно спиратись на аналітико-діагностичну, організаційну, розвивальну та гностичну функції [14, с. 146].

Розглянувши функції, запропоновані зазначеними науковцями, вважаємо, що для розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки необхідно спиратись на такі функції: *мотиваційну*, яка спрямовує та регулює діяльність майбутніх учителів інформатики щодо розвитку пізнавальної активності, задоволення пізнавальних потреб та інтересів, спонукає до саморозвитку й самовдосконалення, реалізації творчого потенціалу через застосування системи заохочень і стимулів; *гностичну*, що пов'язана з процесом опанування студентами знаннями та вміннями з математичних дисциплін, способами одержання інформації з різних джерел, аналізу, синтезу, узагальнення й систематизації інформації, використовуючи нові цифрові технології; *інтегративну*, яка сприяє розумінню майбутніми учителями інформатики важливості математичної підготовки, можливостей застосування набутих вмінь та навичок в професійній діяльності, передбачає використання студентами нових цифрових технологій в процесі розв'язування математичних проблем; *рефлексійну*, що полягає у здійсненні майбутніми учителями

інформатики самоаналізу, самоконтролю і самокорекції рівня розвитку пізнавальної активності в процесі математичної підготовки.

Визначені методологічні підходи, принципи та функції в єдності становлять теоретичну основу ефективного процесу розвитку пізнавальної активності майбутніх учителів інформатики під час математичної підготовки.

7. Висновки

Отже, в умовах реформування та інформатизації освіти важливо розвивати пізнавальну активність майбутніх учителів інформатики, що сприятиме ефективній навчально-пізнавальній та подальшій професійній діяльності; швидкому реагуванню на зміни, що відбуваються в освіті під впливом інформаційних процесів; прагненню до саморозвитку й навчання впродовж життя.

На основі аналізу наукових праць здійснено дефінітивний та структурний аналіз поняття «пізнавальна активність майбутнього вчителя інформатики» та визначено суть і структуру досліджуваної якості в контексті дослідження, а також запропоновано під розвитком пізнавальної активності майбутніх учителів інформатики розуміти усвідомлений процес підвищення рівня пізнавальної активності студентів, внаслідок якого відбувається зміна досліджуваної якості, що проявляється в позитивних змінах мотиваційного, операційно-дослідницького й особистісно-рефлексійного компонентів, й сприяє ефективному здобуттю професійно важливих знань і вмій та навичок їх використання у педагогічній діяльності.

Для ефективного розвитку пізнавальної активності майбутніх учителів інформатики вважаємо доцільним використати потенціал математичної підготовки як складової професійної підготовки, дотримуючись засад системного, особистісно-діяльнісного та інформаційного методологічних підходів; послуговуючись загальнодидактичними принципами під час організації математичної підготовки, а особливо принципами фундаменталізації освіти, орієнтації математичної підготовки на майбутню професійну діяльність, індивідуального підходу та суб'єкт-суб'єктної взаємодії між викладачем і студентами, проблемності, когнітивної візуалізації; спираючись на мотиваційну, гностичну, інтегративну та рефлексійну функції розвитку пізнавальної активності майбутніх учителів інформатики в процесі математичної підготовки.

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**AESTHETIZATION OF THE EDUCATIONAL PROCESS
IN BOARDING SCHOOL**

Chykhurskiy Anatolij¹
Demjanchuk Oleksandr²

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Abstract. The conceptual idea of the study is that the aesthetization of the educational process at the boarding school is determined, first of all, by the effectiveness of teaching in it the subjects directly related to the aesthetic development and upbringing of the child, that is, both visual and other types of art. Aesthetization of the educational process of the boarding school is considered as a process and the result of the introduction into its content of the aesthetic component in order to form aesthetic consciousness, aesthetic worldview, aesthetic ratings of pupils. The purpose of the research is to substantiate theoretical and methodological principles, organizational and pedagogical conditions of aesthetization of the educational process of the boarding school. The subject of research is the content, forms and methods of the aesthetizing educational process in boarding school.

The leading theoretical and methodological approaches that reflect interdisciplinary nature of the investigated problem and allow distinguishing a certain hierarchy, namely: general theoretical approaches – philosophy of art and system approach; branch approaches – humanistic, cultural, social-pedagogical, personally oriented. It is proved that such set of scientific approaches makes it possible to comprehensively consider the problem of aesthetization of the educational process of the boarding school. The boarding school is considered as an environment of aesthetic education and upbringing of the individual. The possibilities of forming a creative person in classes of Fine Arts are determined. The organizational and pedagogical conditions of aesthetization of the educational process of the board-

¹ Candidate of Pedagogical Science,
Senior Lecturer of the Fine Art Department,
Lesia Ukrainka Eastern European National University, Ukraine

² Doctor of Pedagogical Sciences, Professor,
Head of the Methodology of Teaching Arts Disciplines Department,
Kremenets Regional Humanitarian and Pedagogical Academy
named after Taras Shevchenko, Ukraine

ing school are substantiated: creation of aesthetic environment of a general-education boarding school (with the corresponding content, structure, features); making an aesthetic component to the subjects of the humanitarian cycle and establishing appropriate interdisciplinary links; taking into account in the aesthetization of the educational process mental processes that provide aesthetic education and aesthetic development of the personality of a student of a general-education boarding school; modernization of the content of fine arts in a comprehensive boarding school. It is revealed that the defined conditions of aesthetization of the educational space of the boarding school reproduce three levels of aesthetization: the macro level is provided by the first organizational-pedagogical condition; meso-level – is provided by the second and fourth organizational-pedagogical conditions through technology and modeling of the process of aesthetizing the educational space of the boarding school; The micro level is implemented in the third organizational-pedagogical condition, which reflects the personal status of the aestheticization of the educational space of the boarding school.

1. Introduction

Modern socio-political transformations of Ukrainian society lead to the urgent need for the formation of the spiritual foundations of the activity of the individual, culture, moral life of society, the nation, which involves the search and establishment of new socially significant values. In this connection, the problem of creating an aesthetically filled educational space in educational institutions, that is, its aesthetizing as a process and the result of providing an aesthetic form of the substantive essence with the help of forms and methods of aesthetic influence on the person is actualized. In this case, the aesthetization of the educational process of the boarding school is considered as a process and the result of the introduction into its content of the aesthetic component in order to form aesthetic consciousness, aesthetic worldview, and aesthetic assessments of its pupils.

Particular attention of modern pedagogical theory and practice deserves to be studied the ways of aesthetizing the educational environment of the institutions of social protection of children, characterized by a combination of processes of socialization, aesthetization, education and upbringing, and is provided in the conditions of the boarding school through the interrelation of educational and extra-curricular artistic and aesthetic activities, and as well as harmonization of various social aesthetic and educational

influences – sociocultural, socio-group, vocational and pedagogical. The goal of a comprehensive boarding school is to develop and form a person, to ensure its socio-psychological adaptation and rehabilitation, to educate the child of universal values, a civic position, a sufficient level of culture, and the ability to live independently. Aesthetization of the educational process of the boarding school contributes to the development of natural abilities and talents, the creative thinking of pupils, their axiological sphere and the formation of world outlook.

The purpose of the research is to substantiate theoretical and methodological principles, organizational and pedagogical conditions of aesthetization of the educational process of the boarding school.

The purpose of the research led to the setting of such tasks:

- to analyze the methodological principles of the problem of aesthetization of the educational process of the institution of general secondary education;

- to find out the specifics of the boarding school as a medium of aesthetic education and personality education;

- to determine the role and significance of fine arts in the process of aesthetizing the educational environment of the boarding school and the personality of the pupils;

- to substantiate the organizational and pedagogical conditions of aesthetization of the educational process of the boarding school.

2. Methodological principles of the educational process aesthetization

The general methodological basis of the study is the philosophy of sensory knowledge, which is based on the unity of sensualism and rationalism in the development of personality. At the level of sensory knowledge, the reflection of the external world of man in a figurative form, which is directly related to aesthetic development, is based on the direct contact of the subject of knowledge with objects of real reality. We consider the conclusion of philosophers (E. Husserl, O. Knyazev, A. Lipkin, I. Tsekhmistro, etc.) as important, that the result of sensory knowledge is the sensation, perception and presentation as the key concepts of our study. Feelings essentially determine the process of formation of aesthetic flavors, aesthetic world outlook, and others like that. Thus, visual senses give information on the color and shape of objects, about their placement in the surrounding space. Auditory sensations reproduce sound vibrations

in the environment, and tactile – temperature, size, influence on other objects and phenomena, and so on.

Perception is formed from all kinds of sensations that are synthesized and create a holistic image of a certain object – its color, form, appearance, sound, tactile influence on our consciousness, etc. Based on the experience of perception there are more stable formations, which in the philosophy of sensory knowledge received the name of the presentation. Representations can be formed on the basis of our memory or on the basis of imagination, which is of particular importance in the process of formation of aesthetic in man, because it is the basis of visual-thinking thinking, which makes it possible to solve the tasks of aesthetic nature without the participation of practical rational thinking.

Philosophy of sensory knowledge revealed several basic functions of creative imagination, namely:

- the embodiment of the surrounding reality in images;
- psychological regulation of emotional states of personality;
- regulation of cognitive processes of a person and all of his mental states (memory, attention, speech and speech, emotions);
- development of the ability of rational planning of further actions, using images;
- programming of human activities and evaluation of programmed behavior.

In this case, the creative imagination, in our opinion, directly concerns the aesthetization of the environment of the individual, since, firstly, with the help of a creative imagination, agglutination (agglutination – translated from the Greek – gluing) is realized, when, by means of a combination, the unification of parts previously unbound objects there are new objects having a new figurative sound; and secondly, creative imagination is associated with an analogy when new creative images are created as similar to those previously existing; Thirdly, with the help of imagination, new images are created under the influence of accentuation (underscoring the part of a particular object) and exaggeration (the spread of emphasis on the entire artistic object); Fourthly, the imagination uses typing when the total is displayed in a typical one; so new artworks and literary works are created, when the typical one is displayed in a single.

The philosophy of sensory knowledge is closely linked to the philosophy of art, which we also consider to be the leading methodological basis

of our study. The basis of the philosophy of art is modern aesthetics as a science of sensory knowledge of the world. Philosophy and art are constantly interchangeable: the philosophical foundations of artistic activity reveal the depth of the philosophical vision of aesthetics of life; on the other hand, art provides an in-depth assessment of human existence in its individual sense, which is important to take into account in the process of aesthetization of the educational environment and involves the widespread use of works of art.

In the context of the research, in our opinion, the most significant meaning, in our opinion, is humanistic, personally oriented, culturological and socio-pedagogical approaches, the place and role of which are determined by two main aspects of the research: on the one hand, its aesthetic-artistic content, on the other hand – the specifics of socialization processes in boarding schools and their connection with the aesthetization of the educational process.

The humanistic basis of the aesthetization of the educational process lies in the very definition of humanism, which is outlined in scientific literature as a scientific theory, reflecting recognition of the priority of man as a product and result of the culture of mankind and each individual nation [1, p. 4]. The most conceptual in humanistic pedagogy is the thesis that the goal of any educational process is a child whose personal development, like the personal development of a teacher, depends on their humanistic subject-subject interaction. This process is characterized by the equality and equal rights of the adult and the child as co-authors, accomplices, subjects of the knowledge and socialization processes [2].

Humanistic approach in pedagogical science is closely connected with personally oriented, because personally oriented aesthetization of educational process, in our opinion, relies on the position on the personal meaning of each aesthetic experience, aesthetic perception and aesthetic effect. Finally, the aesthetic consciousness of each student has a purely personal character and depends on his cognitive, activity, reflexive possibilities and the peculiarities of the environment in which these qualities are formed and developed.

The personally oriented process of aesthetizing the educational environment of the boarding school, in our opinion, should be oriented towards the realization of the individual needs of the pupil in aesthetic; formation of the individual motivation of each student to perception, awareness, reproduc-

tion of the beautiful; the development of aesthetic interests of students – in certain branches of art or individual cultural and artistic currents.

Cultural foundations of the educational process involve its analysis as a cultural phenomenon, as a way of transferring cultural experience from generation to generation. The fundamentals of the cultural approach to the educational process are laid down in the writings of V. Bibler, B. Gershunsky, A. Gurevich, D. Likhachev, L. Masol, N. Miropolskaya, L. Khomych and others. Cultural basis of the educational process with aesthetic is closely linked.

During the implementation of the cultural approach to the aesthetization of the educational process at the boarding school, the pedagogical aspect of this approach clearly manifests itself clearly, which is particularly clearly traced in the provisions on the close connection of culture with pedagogical activities expressed in pedagogical science by the notion of “pedagogical culture”. The ability of the teacher to transform creative activity determines, in the end, his ability to aesthetic perception, understanding and awareness of the aesthetic. Therefore, the cultural priorities of the educational process include the realization of the priorities of a humanistic, creative nature.

The development of the content of the educational process involves taking into account all social indicators of its implementation, which determined the need to involve the methodological foundation of our research socio-pedagogical approach. In doing so, we proceed from the fact that social pedagogy as a science of socialization of the individual determines the main factors that determine the successful development of the child in all stages of adulthood. In addition, socio-pedagogical theory directly relates to the educational process in institutions where there are children with disabilities in social development, including boarding schools. The specifics of children socialization in such institutions with the analysis of all possible factors and directions of the educational process belongs to the objects of study of social-pedagogical science. Socialization taking into account all its factors is closely connected with the aesthetization of the educational process, which is reflected in the content and features of the influence of socialization factors on the overall process of development and formation of the personality of the pupil. Aesthetic ideals, values, norms directly affect their respective social norms and values; the child’s experience of aesthetic feelings is closely linked to the formation of her moral worldview, and, therefore, with the attitude to society in all its manifestations, including the world of beauty.

The above-mentioned scientific and theoretical approaches form a certain set with signs of systemicity. Not accidentally, the system approach is considered one of the most interpretive in pedagogical science. According to S. Goncharenko, the systematic approach can most clearly explain the basic laws and trends in the development of pedagogical phenomena [3]. The general principles of the systematic approach are described in the scientific work of A. Baskakov, N. Tulenkov, S. Goncharenko [3], O. Krushelnyska [4], O. Kustovskaya [5], G. Rozavin, and others.

The system approach includes a certain guideline according to which in the close relationship there are components of a holistic object, and it is possible to identify the mechanisms of the specified integrity [5, p. 8]. The system, in turn, can be divided into a greater or lesser number of components, carried out with the help of a comparable unit of analysis. In our case, such a unit of analysis is the boarding school as the basis of the educational-educational space, which has a certain level of aesthetization. We believe that the object chosen by us for the study – the educational process in the general school boarding school – is a pedagogical system, since it has all the properties necessary for the existence of the system (according to O. Kustovskaya [5, pp. 20-21]).

Thus, through the prism of the foregoing, we can reach the general conclusion that the scientific approaches outlined by us reflect both the interdisciplinary nature of the problem under study and a certain hierarchy that can be represented as a set of two levels:

– *general theoretical approaches* – philosophy of art and system approach;

– *sectoral approaches* – humanistic, cultural, social and pedagogical, personally oriented, which, in our opinion, makes it possible to comprehensively and comprehensively consider the problem of aesthetization of the educational process of the boarding school, in particular, regarding the formation of the pupils' creative personality taking into account the specifics of the educational process in the boarding school.

3. Boarding school as an environment for aesthetization of education process

Comprehensive boarding school is a general secondary education institution for children who need special social support in the process of their socialization. The main task of the boarding school is to maintain, train and

educate a given group of children as they do not have the necessary conditions for education and upbringing in the family.

The peculiarity of comprehensive boarding school in Ukraine is determined, first of all, by the fact that the vast majority of its pupils are orphans. Whatever the orphanhood – biological or social – it imprints on the entire process of socialization of the child's personality, including the aesthetic development in the boarding school. Scientists distinguish both social and economic factors of the growth of the number of orphans and children deprived of parental care [6, p. 77]. Social factors include, first of all, an increase in the number of crisis families, their alcohol abuse, drug addiction, falling moral responsibility of adults for the upbringing of children, etc. [7, p. 9]. We also note that the tendency to increase the number of orphan children is characterized by the fact that their moral and value development is influenced by a significant number of natural factors, which, of course, do not always contribute to the aesthetic growth of the personality of the orphan child. In addition, in Ukraine, as well as in many other countries of the world, there is a pronounced crisis of the family institute, which also does not promote the transfer of moral and aesthetic values from generation to generation and affects the general reduction of the aesthetization of the space of socialization of the individual.

The level of aesthetic development of a child in boarding school is also significantly influenced by the time and method of enrollment in a designated type of educational institution. Thus, a certain number of boarding school children from birth are in different social institutions (baby houses, orphanages, etc.), which determines their emotional deprivation, which, in turn, directly affects the development of aesthetic senses, aesthetic consciousness, and aesthetic world perception. In general, scholars (Y. Alekseinkova, I. Zvereva, O. Krasnytska, J. Langmeyer, O. Polyanichko, etc.) define deprivation as a mental state of the person, caused by lack of necessary. In this case, two types of deprivation are often distinguished – absolute (caused by impossibility of satisfying basic needs) and relative (unfair discrepancy between the value expectations and the real possibilities to satisfy them). Thus, we define the problems of aesthetizing the educational process in boarding schools as those that correlate with the relative deprivation of an individual's personality.

In our opinion, the need for the purposeful use of the aesthetic component of the educational process in the boarding school is determined

by a wide range of possibilities of the indicated component for the development process of the personality of the pupil of the boarding school and its successful socialization. In boarding school, as the scientific work of N. Osipova [8] shows, it is difficult to overestimate the role of the visible medium saturated with visual elements. This environment has a serious impact on the psycho-emotional state of the pupils and is a peculiar component of the socioecological space. The visual environment, undoubtedly, in addition to purely natural objects, also includes the appearance of the premises, their interior, artwork, etc. Therefore, the visible environment is conventionally divided into two parts: natural and artificial. According to V. Filin, the artificial environment most often creates problems of the personality's videoecology, that is, the negative impact on the pupil of homogeneous and aggressive visible units of space [9]. The scientist came to the conclusion about the importance of automatics of saccades, that is, the involuntary movement of an eye of a person, for the accumulation of aesthetic information and its reflection in the brain. At the same time, homogeneous and aggressive visual fields, which, unfortunately, the saturated environment of educational institutions, unfortunately, create negative effects for the feedback between the sensory and motor apparatus of the human body [9]. A homogeneous field is a surface with missing or minimized visible elements (smooth doors, panels, monolithic glass, polished simple furniture, smooth plastic, etc.). Aggressive visible field is often a collection of a large number of homogeneous elements – grids, lattices, tiles, a large number of identical windows, etc. Given that human interaction with the external environment is carried out on the principle of the least motivation, especially the negative effect of homogeneous and aggressive visible field for children.

In the context of the above, it can be argued that the aesthetization of the educational environment of the boarding school is, in our opinion, complicated by several reasons: a small number of architectural elements; the presence of numerous straight lines and corners inside and outside the boarding school; oversaturation of large educational planes in the boarding school environment; predominance of direct silhouettes of school premises and student's dormitory; the obvious lack of artistic elements in the interior of the boarding school and their low quality.

The above mentioned problems of aesthetic perception of the boarding school world directly related to another form of deprivation – existential.

This kind of deprivation, within which there is emotional isolation (as was said by V. Frankl, “emotional vacuum” [10, p. 5]). Under such conditions, the child does not feel the meaning of their existence, loses taste to life, can fall into depression. A. Polyanychko defines the relationship between existential, family and institutional (that is, existing in the institution of detention) deprivation. The most complex types of deprivation in this regard, the scientist considers sensory, emotional, informational, cultural, spiritual, value-normative, which, in our opinion, directly related to the aesthetic worldview [11, p. 47].

Thus, the problems of aesthetic personality development of a pupil at boarding schools are most significantly related to the relative sensory-emotional deprivation of an existential character, which is manifested in the institution of detention, that is, in a boarding school.

Deprivation processes in the boarding school environment directly influence the process of aesthetic development of pupils. According to O. Pylypenko, orphans and children deprived of parental care may have a delayed aesthetic development [12]. Some of them can not differentiate between colors and sounds at the initial stages of study at a boarding school; their aesthetic perception lags behind the norm, as a result of which they perceive only elementary manifestations of aesthetic.

Therefore, in our opinion, the aesthetization of the educational process at the boarding school should be aimed at solving the following main tasks:

- correction of defects of psycho-emotional development and emotional deprivation;
- development of aesthetic perception, aesthetic taste, enrichment of children's life experience with aesthetic impressions;
- formation of sensory culture among pupils, prevention of sensory deprivation;
- development of emotional sphere of children, their aesthetic feelings;
- promoting the development of creative abilities of pupils and the development of their artistic skills.

Thus, on the basis of theoretical analysis revealed that the problem of aesthetic development of an individual pupil in terms of the residential institution type the most significantly associated with maternal relative sensory-emotional deprivation existential nature that manifests itself in the maintenance facility, that is a secondary boarding school. We believe that deprivation processes in the boarding school environment directly influ-

ence the process of aesthetic development of pupils and the peculiarities of the formation of the pupil's creative personality. In this regard, assume that the classes in the fine arts have great importance both for aesthetic education process orphanage and aesthetic individual pupil as a subject of definite process.

4. Aesthetization of pupil personality on Fine Arts classes

Using the opportunities of the “Fine Arts” discipline, students develop a sense of beauty, formed high aesthetic tastes, the ability to understand and appreciate works of art, monuments of history and architecture, the beauty and wealth of native nature. Fine art classes form students in the sphere of spiritual interests, views on life, teach to understand artistic works. Particular attention in the visual activity of students is drawn to the discovery, development and encouragement of creative abilities (imagery of representations, courage of thought, curiosity, non-standard, associative thinking, etc.).

The most productive forms of artistic and pedagogical activity are integrated: collective creative tasks, collective creative tasks, work in small groups, social-game complex classes [13, p. 16]. Important to consider the problem under study is that, in accordance with the concept of general artistic education, curricula for fine art combine the ideas of holistic aesthetic, spiritual and creative development of the individual and provide the basis for profile education of different directions.

On the classes of Fine Art, such specific forms of learning as perception, knowledge, evaluation and creation of works of art are used. According to G. Padalka, the perception of art is “the process and result of perception and awareness of information contained in artistic images.” Educational artistic knowledge is “the interaction of the subject (student) and the object (artistic work), aimed at achieving new knowledge about art” [14, p. 3]. The evaluation of Art is a “process and result of finding out the measure of aesthetic perfection of artistic works.” Creation of Art – “the process and result of the invention of a new, something that was not previously in the art. Educational creativity involves the achievement of artistic results and does not necessarily contain objective novelty” [14, p. 3]. Moreover, perception, evaluation and creation are used in an inseparable connection and are indispensable components of any artistic activity, regardless of the degree of study.

We agree with the pedagogical considerations of L. Lyubarskaya, which, to the main tasks of teaching fine arts, includes: the formation of children's artistic and aesthetic attitude to reality as a ability to non-utilitarian, artistic knowledge of the world and its figurative assessment; the development of specific for the artistic and creative process of universal qualities of the individual as the basis for the development of its creative potential; the formation of knowledge and ideas about fine arts, its history and role in people's lives, the skills of understanding the language of various types of fine art, understanding the role of artistic image in art, developing the skills of his perception and emotional and aesthetic assessment; formation of needs and abilities for productive artistic creativity; the development of sensory abilities of children, which will contribute more to the full value of artistic and aesthetic perception [15, p. 23].

Fine art classes at boarding schools are diverse in terms of types and methods of educational activity, the aesthetic potential of which is determined by the special creative activities of the pupils. This is drawing from nature, decorative drawing, thematic drawing and conversations about art. Drawing from nature, in turn, involves drawing and painting classes; decorative work – compilation of patterns, elements of artistic design, decorative design work. In conversations about art, students learn about paintings, graphics, sculptures, architectural monuments and decorative arts.

The use of various materials and artistic techniques such as watercolor, gouache, pastel, felting, application, modeling, stained glass, stained glass, etc. plays an important role in stimulating students' creative attitude towards thematic tasks. Particular attention to these painting classes should be given to the expressiveness of the picture: the characterization of images, the organic connection of the elements of the picture, harmony of forms, color resolution. Particular attention in the process of aesthetizing the educational environment of the boarding school deserves and decorative work. By developing the aesthetic taste of students, gradually, throughout the course of study, they form an understanding of the significance of arts and crafts in life, practice and everyday life of the person. At these classes, students learn the understanding of the relationship between the elements of decoration and the utilitarian purpose of the subject, its form, material, the ability to distinguish samples of art from fake art. In addition to the tasks of decorative character, students learn about the lessons of decorative work with some types of graphics (font works, poster, wall paper, album, etc.). It

is on the decorative work in the boarding school that the function of giving students an elementary concept of industrial-technical aesthetics. Thus, we have identified the place and role of fine arts in shaping the creative personality of the pupil of the boarding school in the context of the general problem of aesthetizing the educational process in the designated institution and providing appropriate organizational and pedagogical conditions.

5. Organizational and pedagogical conditions of educational aesthetization in the boarding school

Taking into account the specifics of the subject of our research, we determine the following organizational and pedagogical conditions for the aesthetization of the educational process in the general-education boarding school: creation of the aesthetic environment of the comprehensive boarding school (with corresponding content, structure, features); making an aesthetic component to the subjects of the humanitarian cycle and establishing appropriate interdisciplinary links; taking into account in the aesthetization of the educational process of mental processes that provide aesthetic education and aesthetic development of the personality of a student of a general-education boarding school; Modernization of the content of fine arts in a general-education boarding school.

We characterize them in more detail. Significant potential for the creation of aesthetic environment, as evidenced by the theoretical analysis of the problem under study and many years of pedagogical experience, have arts, artistic and aesthetic creativity, which must serve to develop the ability of sensory perception, a deep understanding of beauty in art and everyday life, based on a stable motivation to realize its own life in accordance with the laws of morality and beauty. The aesthetic environment of the boarding school should also be characterized by appropriate aesthetic design of classes, libraries, dining rooms, game rooms and other premises, a variety of forms, colors, sounds that accompany the child's life in such an educational institution.

Particular attention, in this context, deserves the subjects of the educational process of the boarding school. Through their pedagogical activities, teachers and educators should create favorable conditions for the formation of a culture of behavior and relationships in a group of children, to be a model, to positively influence the formation of a system of aesthetic knowledge and skills among students. We consider it expedient to intro-

duce such kinds of creative activity, which would combine pedagogical and student groups, positively influenced the cultural level of their interrelations, aesthetics of design of premises, etc. In this context, the involvement of the public, artists, architects, and designers, which could help, for example, the execution of the building of the boarding school, can be considered relevant in this context.

Sources of creation of aesthetic environment also respect nature, works of fine art, music, fiction, cinema, theater, etc., where the main expression of aesthetic can be considered the design of life, word, theater, nature, social facts and events, etc. It seems that the aesthetization of the educational environment of a residential institution allows it to change its information field, to create a set of significant facts, phenomena, processes that reproduce the level of formation of aesthetic as a general characteristic of the personality of the pupil. To the aesthetic components of the educational space of the boarding school we also refer architecture and design, where the first reflects the stable nature of the artificial environment, the organized space where the educational process takes place (buildings, premises, adjacent territories, specifics of their structure and location, etc.), the second is the content filling of this medium in the form of an infinitely diverse system of objects that serve to improve the educational and educational space and its aesthetization. Agree with the opinion that according to the rules and norms of design in a general-education boarding school, the peculiarities of the pupil's perception of the surrounding space are not sufficiently taken into account, especially in representative systems – visual, auditory, kinesthetic [8, p. 153].

Considering the necessity of introducing the aesthetic component to the subjects of the humanitarian cycle and establishing appropriate interdisciplinary connections, we note that the aesthetic component of humanitarian education in a general-education boarding school is also determined by its humanistic content, which involves acknowledging the priority of the child's personality, the uniqueness of her subject experience, uniqueness and self-value of creative potential. Humanitarian disciplines traditionally include the history of Ukraine, Ukrainian literature, foreign literature, world history, ethics, law, each of which, in our opinion, has an indisputable aesthetic component, the use of which has its influence on the general aesthetization of the educational space of the boarding school. Of particular importance in the content of education in boarding schools in view of the problem of aesthetization of the educational space plays, in our opinion, fine arts. At

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the same time, the basis of the development of the image is the optimal combination of different types of reproductive and productive activities, as well as an organic combination of educational and educational processes.

It should be noted that the study of humanities in the conditions of the boarding school should be based on the understanding that the process of creating an artistic image in the student's minds is differentiated in time. Before the first acquaintance, when the student receives some characteristic information, the included review is the first stage of perception. The mood for perception (review and analytical-syntactic analysis) activates the receptor activity of students, providing the educational process of emotional background. It accelerates perception, gives it a figurative emotional tint, helps reduce the number of repetitions, and has a qualitative effect on perception. The previously perceived images, their analytical and synthetic work, emotional-shaped overlays create a thesaurus – a kind of luggage, which determines the value of artistic representation (perception) and information. In the process of assimilation of the image of the students, his general form involves not the entire experience of the student, but its component, which is close to the visual form presented. It should be noted that in the conditions of approaching the figurative-emotional content of the artistic image to the sensory experience of the child, the perception of the form of the image is much more active and qualitatively different in reproduction (for example, graphic), brings aesthetic pleasure to the students.

In our opinion, the implementation of interdisciplinary relationships deserves special attention in the process of aesthetizing the educational process of the boarding school, which should serve the idea of creating a child's integral picture of the world, based on the generalized knowledge about nature, man, society, art in their interdependence and interdependence. This requires the implementation of an integrative approach to teaching humanitarian subjects in specific conditions of a certain limited communication of students studying in residential institutions, from the real conditions of social communication. To this end, we consider it expedient to introduce into this educational process a type of lesson as integrated (from the integer integer – complete, integral), which involves not only the organic combination of facts, information, additional information of other subjects, but also grouping them within a single theme, which contributes to the informational enrichment of perception, thinking and feelings of students through awareness of the dialectical unity of the com-

mon, special, individual in the knowledge of the world and allows you to understand some kind of phenomenon, concept in the context of awareness of the integrity of knowledge. Under such conditions, the objects of cognitive activity of students become issues of interdisciplinary nature (general ideas, theories, laws, facts, complex problems), which allows students to form a critical thinking comprehension of the material being studied, actualize the subject experience, translate the motivation of cognitive activity in the plane of personal significance.

The organizational and pedagogical condition, which involves taking into account in the aesthetization of the educational process of mental processes that provide the aesthetic education and aesthetic development of the personality of a pupil of a comprehensive boarding school, reveals their possibilities in shaping the aesthetic composition of the person – aesthetic consciousness, aesthetic perception, aesthetic sensations, tastes etc.

Describing such an organizational-pedagogical condition as modernizing the content of fine arts in a general-education boarding school, we must note that fine arts should be regarded as an artistic discipline and a general educational subject with broad educational and educational capabilities and tasks that performs a special mission to provide aesthetic processes. Consequently, we formulated a number of organizational and pedagogical conditions for the aesthetization of the educational space of a comprehensive boarding school, which, in our opinion, reproduce the main levels of aestheticisation: the macro-level is provided by the first organizational and pedagogical condition; meso-level – is provided by the second and fourth organizational-pedagogical conditions through technology and modeling of the process of aesthetizing the educational space of the boarding school; The micro level is implemented in the third organizational-pedagogical condition, which reflects the personal status of the aestheticization of the educational space of the boarding school.

6. Conclusions

The leading theoretical and methodological approaches that reflect both the interdisciplinary nature of the problem being investigated and allow distinguishing a certain hierarchy, namely: general theoretical approaches – philosophy of art and system approach; branch approaches – humanistic, cultural, social-pedagogical, personally oriented. It is proved that such a set of scientific approaches makes it possible to comprehensively and compre-

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hensively consider the problem of aesthetization of the educational process of the boarding school.

The general-school boarding school is considered as a medium of aesthetic education and personality education. Problems of aesthetization of the educational process in boarding schools are defined as those that correlate with the relative deprivation of the individual of the pupil of the boarding school (maternal, sensory, emotional, cognitive, social deprivation). The aesthetic components of the educational space of the boarding school are primarily architectural and design. The possibilities of forming a creative person in classes on fine arts are determined. It is proved that with this educational subject teachers develop feelings of beauty, form high aesthetic tastes, ability to understand and appreciate works of art, monuments of history and architecture, beauty and riches of native nature. Fine art classes form students in the sphere of spiritual interests, views on life, teach to understand artistic works. Particular attention in the visual activity of students is drawn to the discovery, development and encouragement of creative abilities (imagery of representations, courage of thought, curiosity, non-standard, associative thinking, etc.).

The organizational and pedagogical conditions of aesthetization of the educational process of the boarding school are substantiated, namely: creation of the aesthetic environment of a comprehensive boarding school (with corresponding content, structure, features); making an aesthetic component to the subjects of the humanitarian cycle and establishing appropriate interdisciplinary links; taking into account in the aesthetization of the educational process of mental processes that provide aesthetic education and aesthetic development of the personality of a student of a general-education boarding school; Modernization of the content of fine arts in a general-education boarding school. It is revealed that the aforementioned conditions of aesthetization of the educational space of the boarding school reproduce three levels of aesthetization: macro, meso- and micro levels.

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