Presentation date: July 2024, **Date of acceptance**: August, 2024 , **Publication date**: September, 2024

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FORMATION OF PROFESSIONAL COMPETENCE IN THE TRAINING OF SPECIALISTS IN UKRAIN

FORMACIÓN DE COMPETENCIA PROFESIONAL EN LA FORMACIÓN DE ESPECIALISTAS EN UCRANIA

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Suggested citation (APA, seventh ed.)

Stynska, V., Prokopiv, L., Bosa, V., Tymchenko, A., Bielikova, V., & Bezliudnyi, O. (2024). Formation of professional competence in the training of specialists in Ukrain. ***Revista Conrado, 20***(100), 322-334.

ABSTRACT

The article examines the meaning of the concepts “competence”, and “professional competence”. The main types of fundamental competencies are highlighted. The importance of the nature of activity for the formation of professional competence in the training of specialists, which is the main characteristic feature of the competence approach, has been proven. The principles and professional qualities and skills of a specialist, which are an important component of the formation of professional competence, are considered. The main components of a specialist’s professional competence are singled out, and its mandatory content is revealed. In the formation of professional competence during the training of specialists, it is necessary to consider the performance of functions, which are analyzed in the article. We conducted an experimental study to consider the ways of forming the professional competence of a specialist as a necessary component of improving the higher education system as a whole, the purpose of which is the high-quality training of an educated specialist and the formation of the necessary skills, abilities, and knowledge of a professional nature.

Keywords:

Professional competence, specialist training, competence approach, distance educational technologies, components of specialist professional competence.

RESUMEN

El artículo examina el significado de los conceptos “competencia”, “competencia profesional”. Se destacan los principales tipos de competencias fundamentales. Se ha comprobado la importancia de la naturaleza de la actividad para la formación de la competencia profesional en la formación de especialistas, que es el principal rasgo característico del enfoque competencial. Se consideran los principios y las cualidades y habilidades profesionales de un especialista, que son un componente importante en la

formación de la competencia profesional. Se destacan los principales componentes de la competencia profesional de un especialista y se revela su contenido obligatorio. En la formación de la competencia profesional durante la formación de especialistas, es necesario tener en cuenta el desempeño de las funciones que se analizan en el artículo. Realizamos un estudio experimental con el objetivo de considerar las formas de formar la competencia profesional de un especialista como un componente necesario para mejorar el sistema de educación superior en su conjunto, cuyo objetivo es la formación de alta calidad de un especialista formado y la formación de las habilidades, habilidades y conocimientos necesarios de carácter profesional.

Palabras clave:

Competencia profesional, formación de especialistas, enfoque competencial, tecnologías de educación a distancia, componentes de la competencia profesional de un especialista.

INTRODUCTION

Currently, one of the tasks of higher education institutions is training a competent, competitive specialist to work in the conditions dynamically changing education, capable of independent and creative decision-making professional tasks, who possesses not only knowledge, high morals qualities and is a professional, but also knows how to act adequately in relevant situations, to bear responsibility for their activities.

At the current stage, the effectiveness of the educational system depends on the level of professional training of an individual who possesses not only knowledge and high moral qualities but also knows how to act adequately and professionally in a relevant situation, to apply the acquired knowledge in practice and take responsibility for their actions. Therefore, the main goal of education is to prepare a competent personality, upbringing, and development.

To ensure the quality of higher education, in the modern conditions of education reform, an important task of a higher education institution is the formation of professional competence in the training of highly qualified, competitive specialists. With this approach, the institution of higher education must satisfy the needs of the individual in quality professional education and qualified personnel (Kozlova et al., 2021).

The formation of the professional competence of a specialist is now considered a necessary component of the improvement of the higher education system as a whole, the purpose of which is the high-quality training of a technologically and technically educated specialist, the formation of the necessary skills, abilities, knowledge of a professional nature and, at the same time, the formation of the components of information culture in the individual by the requirements of the information society (Vdovychenko, 2003). In this connection, the problem of training professionally competent specialists emerges acutely. Their professional training takes place throughout the entire educational process in institutions of higher education (Marushchak et al., 2015).

Literature review

Professional competence is the level of personal mastery of knowledge, skills, and skills of the relevant profession, having the ability to succeed in setting and implementing tasks related to professional activity.

The problem of the formation of professional competence of specialists in various fields of education is considered by Tkachenko (2009), the trends in the use of information and communication technologies in education were clarified and their current state in institutions of higher education was considered, the content, structure, and essence of the professional competence of the future specialist was specified, methodical, psychological and pedagogical literature, scientific works on the problem of the formation of professional competence of specialists in institutions of higher education.

Questions about means of formation of professional competence were studied by. Kuchma, & Filatov (2022), they revealed the essence and content of the professional competence of the future specialist and singled out the main approaches and principles that contribute to the formation of the professional competence of the future specialist in the conditions of distance education. Scientists conducted a modern analysis of distance education, showed their importance in updating the content of education, and their potential, and considered the methods and forms of organization of professional training of education seekers. The construction of distance educational interaction based on the principles of interdisciplinary, systematic, interactivity, professional orientation, gamification, consideration of regional features, application of the provisions of activity, competence, and person-oriented approaches has been proven. Distance educational interaction will contribute to the high-quality training of highly qualified specialists who have specialized professional skills, and knowledge, and demonstrate professional abilities to improve the educational process through the use of innovative technologies capable of developing them independently through self-development.

Drach (2013) proposed modern management trends of educational institutions, methodologically substantiated the peculiarities of master's degree training, and showed ways of managing the competency-oriented paradigm of

higher education pedagogy. The advantages of the management model for the formation of professional competence of specialists have been developed, and the possibilities of implementation in the institution of higher education have been revealed. The proposed means and conditions for the effectiveness of competence-oriented management of professional competitive training of master's students are characterized.

Marushchak, et al. (2015) considered the tasks set for the quality training of specialists. Based on the analysis of skills and knowledge that are necessary for the implementation of professional activities, the pedagogical conditions for the process of formation of professional competence in future specialists were selected for the acquisition of professional competence by future specialists.

Sulyma (2013) generalized the concept of the competence approach in education, developed methodological recommendations and for the quality training of teaching staff in higher education institutions, characterized the stages of development of the competence approach of specialists. He showed the importance of the specialist's professional competence, which is a multidimensional phenomenon that is carried out through project design, organizational management, scientific research, and production-technological competence.

Tymofieieva (2017) substantiated the developed pedagogical conditions for the formation of information and communication competence of future specialists: organization using ICT of independent work of education seekers during extracurricular activities; ensuring subject-subject interaction between the teacher and students in the process of forming information and communication competence; creation of the (informational and educational) environment necessary for the formation of the need for informational and communication competence through the organization of educational activities and the practical component of education seekers. Indicators and criteria for the formation of information and communication competence of future specialists are determined: cognitive (using databases, modern computer tools, knowledge about the peculiarities of using ICT in professional activities, determining rational ways of searching for professional information, and scientific information); motivational and valuable (the desire for self-improvement concerning the professional mastering of ICT.

So, the scientists showed the importance of the specialist's professional competence, carried out a modern analysis of distance education, showed the importance of updating the content of education and its potential, considered the methods and forms of organizing professional training of education seekers; developed, described the advantages, disclosed the possibilities of implementing the management model for the formation of the professional competence of specialists in a higher education institution; the influence of the professional competence of the future specialist on the integrative dynamic characteristics of the individual is proven.

In our research, we see the need to find out: the criteria for the qualitative formation of professional competence in the training of specialists; basic principles, professional qualities, and skills of a specialist, which is an important component of the formation of professional competence; main components, criteria, functions, forms of educational activity, which are important in the formation of professional competence of higher education seekers.

The works of these authors became the theoretical basis for the study of the problem of the formation of professional competence of future specialists in higher educational institutions, which had not previously been the subject of special research in pedagogical science. The analysis of domestic educational practice showed that the problem of the formation of professional competence is gaining relevance in the field of educational services and necessitates increased attention to the professional training of specialists in higher educational institutions.

The purpose of the article. To consider the formation of the professional competence of a specialist as a necessary component of the improvement of the higher education system as a whole, the purpose of which is the high-quality training of a technologically and technically educated specialist, the formation of the necessary skills, abilities, and knowledge of a professional nature.

MATERIALS AND METHODS

To achieve the goal of the research, general scientific, psychological, and pedagogical methods of theoretical research were used: a system-structural and retrospective analysis, in particular, classification, systematization, generalization, comparison; praximetric, in particular, generalization and study of literary sources, methodical materials, modeling of professional activity, systematization of theoretical data, analysis, abstraction, synthesis, forecasting of possible forms of implementation from relevant fields of knowledge.

Categorical requirement of cardinal quality reorientation of the entire development of education, development of new methodological concepts for training specialists for all branches of production, determination of methodological paths implementation of these concepts in pedagogical practice. In recent years, the main direction of such training in advanced countries is considered to be the reorientation of the whole competence specialist training systems. The formation of general cultural and professional competence of a person in the process of his education is considered a strategic goal of education.

Such a methodological approach to the tasks of modern education contributes, on the one hand, to the formation of a comprehensively developed person based on general cultural and civilizational values, and on the other hand, to the development of professional qualities, knowledge and skills that would allow him to effectively perform production functions, successfully compete in the labor market. After all, the rapid dynamics of the development of modern production, and the growing requirements of the labor market for the professional competence of specialists require a person to be able to quickly navigate these requirements, quickly adapt to changes in the social environment

The main provisions of the study are represented by theoretical, methodological, methodical, and practical concepts, which make it possible to create an idea of the ways of formation of professional competence in the training of specialists, structure, content, functions, methodical support of the formation of professional competence in the training of specialists and informational educational space and are aimed at the implementation of separate research ideas.

The theoretical concept helps to identify the main trends in the development of professional competence in the training of specialists in the system of higher education and contributes to the definition of key concepts and constructs that provide a specific result of the investigated problem and the process of understanding the need and essence of the educational space.

The methodical concept highlights high-quality teaching using computer technologies in combination with the provision of innovative educational space (monitoring, teaching-methodical, diagnostic, technological, etc.), contributing to the formation of professional competence in the training of specialists in institutions of higher education.

RESULTS-DISCUSSION

One of the main components of the UN Development Program is the implementation of the project "Educational Policy and Peer-to-Peer Education". Within the scope of the project, discussions were initiated regarding the modernization of the content of higher education and the formation of professional competence in the students of education (Sulyma, 2013).

The professional training of a thinking, proactive, spiritual, creative, self-critical specialist of a new type is possible under the condition of the formation of professional competence during the training of specialists, which means that training in a higher education institution is closer to professional activity in real conditions. After all, the formation of a future competitive specialist and the formation of his professional competence are determined by the primary and constant improvement of his professional activity. Therefore, institutions of higher education are called to equip future specialists with professional competence, and at the same time, it is necessary to change the methodology of conducting practical, seminar, and laboratory classes in professional disciplines (Tymofieieva, 2017).

As noted by Ziaziun (2005)., "the main goal of higher education should be the formation of a holistic and goal-oriented personality, ready for free humanistic oriented choice and individual intellectual effort, possessing multifunctional competencies".

The Educational Commission of the Council of Europe presents competence as the ability to apply the skills and knowledge acquired in the educational process in various situations. At an international conference in 2004, which was held under the patronage of UNESCO and with the participation of the Ministry of Education of Norway, it was agreed that the concept of competence should be considered as the ability to effectively and creatively apply skills and knowledge in situations, in interpersonal relationships, involving interaction in professional situations and with other people in social context Competence includes in its content such concepts that logically come from skills to knowledge and from attitudes to values.

UNESCO interprets the concept of competence as a combination of skills, knowledge, attitudes, and values applied in everyday life (Sulyma, 2013). Therefore, competence is the result of improvement and constant accumulation of professional experience and professional knowledge during activity and life, which leads to clarification of the essence of work, deep knowledge of one's work being performed, means and methods of achieving goals, the ability to clearly and timely assess the professional situation, which has developed, and the ability, in connection with this, to quickly and competently make the necessary decision (Spirin, 2009).

We conducted an experimental study to consider the ways of forming the professional competence of a specialist as a necessary component of improving the higher education system as a whole, the purpose of which is the high-quality training of an educated specialist and the formation of the necessary skills, abilities, and knowledge of a professional nature.

The confirmatory experiment took place in two stages. In the first stage, 24 teachers of higher education institutions and 66 students of graduation courses took part in the experiment. Its main goal was to identify the level of formation of professional competence among future specialists.

The analysis of the received information shows that 42.8% after completing industrial practice demonstrate

professional competence at a level below average (imitative level), and only 7.2% – high (creative level), such results do not adequately meet the required level of specialist training.

First of all, future specialists are focused on arming themselves with a set of subject knowledge, and not on the formation of the latter's professionally significant abilities, skills, personality qualities, and general and professional culture. In addition, the analysis of the organization of the educational process in institutions of higher education allows us to conclude that the main shortcomings of this process are: the position of the teacher as a translator of knowledge and the position of the student as an object of the pedagogical process, which is expressed in the orientation of students to the reproduction of ready-made knowledge; low level of formation of methods of solving professional tasks, passivity and imitation of actions; low level of manifestation of independence, reflection of one's own experience and creative attitude to the matter.

These facts served as the basis for deciding to conduct an additional ascertaining section for students in the process of studying the cycle of subject (special) training disciplines included in the experimental group.

The first group included 20 students. Based on the fact that the group of respondents was a small sample, it was decided to repeat the experiment, but with another group of students consisting of 15 people. The experiment was carried out at this and the following stages according to the type of linear. The same groups were analyzed: they acted as controls (taking into account their initial state) and as experimental (their state during training and after training). Therefore, all data were considered in the study concerning two groups.

In the second stage of the experiment, which states that the main task was to obtain an empirical description of the object of research – the state of formation of individual components of professional competence (the ability to set diagnostic training goals, select the content of training material for practice, determine the set of methods, forms and means of training and knowledge control and skills), expressiveness of the motives of cognitive and professional activity and establishment of initial levels of students' learning as the basis for mastering a professional discipline.

For this purpose, the students were asked to develop an outline of the training session and conduct a fragment of it with the audience (micro-teaching). Based on conducting a trial class, an assessment of the formation of professional competence was carried out using the expert assessment of a teacher of a higher education institution and the method of student questionnaires.

The analysis of the empirical material showed that 74.3% of the 35 participants of the experimental group demonstrate a passive level of professional competence; and 25.7% – imitative; unfortunately, no one is actively searching and creative.

Determination of the expressiveness of the motives of cognitive and professional activity of students was evaluated in the points submitted by them following the subjective significance of the values of the goals of cognitive and professional activity. Acceptance of self-assessment of motives made it possible to activate the by-products of educational activities, in which cognitive and professional motives act as part of the contextual approach in our case, as well as in the form of some scheme of reflection of their activities.

The results of the average values of the expressiveness of cognitive and professional motives of the experimental groups at the ascertainment stage are presented in Tables 1 and 2.

Table 1. Average values of expressiveness of cognitive motives.

№	COGNITIVE MOTIVES	1 GROUP	2 GROUP
1.	Discovery of new	2,9	2,6
2.	Self-development, mastering new methods of activity	3,1	2,7
3.	Interest in knowledge, the process of knowledge	3,2	2,9
4.	Self-expression in cognition	3,3	2,8
5.	Cooperation	3,0	2,9
6.	Research interest	2,9	2,9
7.	Responsibility for the results of scientific creativity	3,6	3,3
8.	Achievements in cognition	3,1	2,9
AVERAGE INDICATOR		3,1	2,9

Source: Own elaboration

Table 2. Average values of the expressiveness of professional motives.

№	PROFESSIONAL MOTIVES	1 GROUP	2 GROUP
1	Theoretical understanding of the basics of professional activity	3,5	2,9
2	Professional growth, self-development	3,2	2,9
3	Interest, vocation to the profession	3,8	3,3
4	Self-expression, self-realization in the profession	3,9	3,2
5	Cooperation with colleagues	3,6	3,3
6	Improvement of activity	3,4	3,0
7	Responsibility for the results of professional activity	3,9	3,3
8	Prestige, salary	3,6	3,0
AVERAGE INDICATOR		3,6	3,1

Source: Own elaboration

Comparing the motives of cognitive and professional activity made it possible to trace their similarities and differences. Cognitive motives are system-forming and are internal to professional activity. Professional motives are relevant to the professional activity of students. It can be seen from the tables that the expression of professional motives in comparison with cognitive ones is not significant. The difference between them is 0.45. This confirms the proposition about only the relative independence of these motives in the integral process of their interdependent development in educational activity. In this situation, cognitive motives serve as a motivational basis for the transition to professional activity.

So, an experimental study aimed at considering the ways of forming the professional competence of a specialist as a necessary component of improving the system of higher education as a whole showed the need to improve the process of forming the professional competence of future specialists. Therefore, we see the need to find out:

- criteria for the qualitative formation of professional competence in the training of specialists;
- basic principles and professional qualities and skills of a specialist, which is an important component of the formation of professional competence;
- the main components of a specialist's professional competence;
- forms of educational activity, which are important in the formation of professional competence of students of higher education;
- criteria necessary for the use of quality assessment of educational courses to form the professional competence of specialists;
- functions and highlight the features of quality professional training of future specialists.

For the formation of professional competence, a competence-based approach is important, which strengthens the practical orientation of education, its subject-professional and pragmatic aspect, which means the mandatory reorientation of the educational paradigm, which dominates with the formation of skills, the predominant translation of knowledge to create conditions for quality mastery of the complex competencies, which mean the graduate's abilities, his potential for sustainable life and survival in the conditions of a multifactorial modern market-economic, social-political, communication and information-rich space (Sulyma, 2013).

Six main types of fundamental competencies are distinguished:

1. intellectual knowledge (lifelong learning);
2. educational competence (ability to study);
3. knowledge for mandatory application (project training, situational experience, flexible planning scheme, inventing solutions to complex situations, actions for monitoring and self-control);
4. instrumental or methodological, key competencies (application of flexible, multivariate, highly developed structures, media and information and computer technologies, language competence;
5. value orientations (democratic, social, individual values);
6. social competencies (teamwork, ability to resolve conflicts, social cohesion, cooperation, etc.) (Ovcharuk, 2003).

For the formation of professional competence in the training of specialists, the activity nature is of great importance, which is the main characteristic feature of the competence approach. The criterion for the qualitative formation

of professional competence in the training of specialists is defined as the achievement of a positive result for the students of education. The ability to analyze, highlight the essentials, compare, be independent, responsible, notice and avoid problems, give adequate self-assessment, be able to cooperate and create, show initiative, work without constant management, and look for ways to solve problems based on logical conclusions – these are the key competencies that highlighted in modern society (Sulyma, 2013).

With the development and implementation of ICT in education, the possibilities of computer technology in their pedagogical content are constantly expanding, therefore, during the formation of professional competence during the training of competitive specialists, there is an opportunity to revise and improve the theory of didactic technology, which is part of ICT education. In this regard, it is relevant to reveal and justify such a general principle, which is necessary in the learning process, although it is not the leading one. It is about the organization of a dialogue between the learner and the teacher, communication, in this case between the computer and the learner. This principle is new, peculiar only to computer learning, it is the principle of cognitive communication (Polishchuk et al., 2022).

In the conditions of the formation of professional competence in the training of specialists, informatization of education, and pedagogical technologies are impossible without the use of ICT, which fully reveal didactic and pedagogical functions, allow to realize the potential opportunities inherent in them. Therefore, the problem of the formation of professional competence in the training of specialists through the formation of information and communication competence in a higher education institution is being actualized. Information and communication competence includes the quality of an education seeker to use information and communication technologies in practice to meet individual needs, professional development, and solving professional tasks. With this approach, the teacher ceases to be a translator of information (Tymofieieva, 2017).

The process of formation of professional competence during the training of specialists involves compliance with the principles of organization of the educational process:

- scientific (the content of the organization of the educational process should be saturated with concepts, objective facts, and theories that correspond to the development of technologies and the modern level of education; the knowledge that students receive in a higher education institution should have a scientific basis);
- sequences (the organization of the educational process includes material with repetition of previously learned and from simple to complex);
- systematicity (knowledge must be consistently included and organized in the system of already acquired knowledge);
- activities (assimilation of information by students of education, their active participation in the educational process, and active consideration of the acquired information);
- humanism (formation of humane pedagogical necessary interaction with education seekers, personality development with full disclosure of abilities and satisfaction of educational needs);
- individualization of training (taking into account the experience, cognitive and psychophysiological characteristics, level of preparation, and development of each student);
- the connection between theory and practice (combination of practical and theoretical training of education seekers);
- accessibility (providing education seekers with material for study with considerable complexity due to the nature of the content);
- electiveity of education (providing education seekers within the variable part of the training educational program a certain freedom of choice of educational content, methods, forms, means of education, sources);
- contextuality of training (the orientation of the specialist training program on the formation of professional competence, highlighting personally and professionally important goals for those seeking education);
- reflections on one's development (the ability to consciously control the level of one's development during the formation of professional competence and the results of one's activity) (Marushchak et al., 2015);
- professional orientation (gives training a contextual character, during training, the future specialist learns the social and subject context of the profession; education seekers are provided with information that is superimposed based on their future professional activity; due to the expansion of the scope and deepening of the content of educational practice, the use of case tasks develops educational and professional activities);
- interdisciplinarity (requires attention to the formation of professional competence on the part of the introduction of interdisciplinary tasks, course and scientific research, educational disciplines of the general educational and professional cycle, and projects);
- the principles of taking into account regional characteristics (determines the quality content of extracurricular independent initial activities, the construction of a system of optional courses to increase the graduate's competitiveness in the labor market;

- the principle of interactivity (through active subject-subject interaction with the teacher, the educational SMART system, information and communication means of learning, professional knowledge is mastered);
- the principle of gamification (activates the professional orientation of future specialists and professional motives through their involvement in educational and professional activities in a game form; conditions the application of methods of game organization of quasi-professional activities, designing, co-working through participation in professional competitions, in particular startups, case championships depending from specialization (Kovalchuk, & Soroka, 2021).

Highlighting the professional qualities of a specialist is an important component of the problem of forming professional competence. The president of the International Forecasting Center, the American researcher M. Setron, analyzed the qualities and skills that are necessary for the future to ensure the success of all "competent workers". He called the main ones that characterize the independence of the student of education, namely: to evaluate and analyze alternatives, the ability to apply the information found, to build a logical course of problem-solving, to find new approaches to solving non-standard problems, and to navigate in unexpected situations. The independence of the learner must necessarily be combined with active interaction in the individual's group, so the future competitive specialist needs communication and interpersonal skills.

An important personal characteristic of the formation of the professional competence of a specialist is creativity as a unity of emotional, intellectual, and volitional qualities, which are embodied in initiative, intuition, flexibility, resourcefulness, and independent thinking (Kravchenko et al., 2022).

Qualities for achieving social mobility and professional success are of great importance in the formation of the professional competence of a specialist: persistence in achieving a goal, self-control, adaptability, psychological maturity, the ability to make decisions, flexibility, properly establishing relationships with the environment (Puhach et al., 2021).

Let's name the main components of a specialist's professional competence:

- personal (set of important personality qualities for professional and social activities);
- activity (a set of skills, the basis of which is gained experience);
- cognitive (psychological and pedagogical knowledge and the system of knowledge of the subject area, based on which professional competence is formed).

In connection with the powerful accumulated basis for the development of the psychological and pedagogical content of the professional competence of a specialist, we will reveal its mandatory content:

1. reflects the professional qualities of a specialist with a sufficient degree of completeness of competitive training, which are required for effective professional activity;
2. makes it possible to form precisely such properties in the conditions of the educational process in institutions of higher education. The analysis of the structural components of the specialist's professional competence shows the reflection of the specialist's multifunctional professional activity. The implementation of the professional functions of a specialist is determined by the peculiarities of the organization of the educational process, the purpose of educational activity, and the age characteristics of the students of education (Drach, 2013).

During quarantine measures, distance education became relevant in all educational institutions (Plakhotnik et al., 2023). To form the professional competence of a specialist, this form of training uses various distance learning applications located on the Intranet network. In face-to-face training, new material from professional training is taught in the form of practical and lecture classes. During distance education, all lectures are held in Google Meet or ZOOM applications in video conference mode with the possibility of communication and demonstration of the teacher's screen. Practical classes take place on the Google Classroom and ZOOM platforms. In distance education, to form the professional competence of a specialist, a course is created, where presentations, educational and methodological materials, videos, etc. are uploaded with convenient access for education seekers, evaluation criteria, and the date of practical work are indicated. Here you can send a message and leave a comment. During the formation of the specialist's professional competence in online classes, teachers explain unclear questions to the students, correct their answers, and analyze the theoretical material with the students. The Viber mobile application and corporate e-mail are used for high-quality communication between the participants of the educational process. In this process, great importance in modern education is given to the introduction of the competence approach, which is a necessary and important condition for compliance with world educational standards. The final module control takes place on the "Moodle" platform. The formation of the specialist's professional competence is the main function of the entire process of training students and is an indicator of successful employment in the international labor market (Kozlova et al., 2021).

In the conditions of distance and mixed learning, the process of forming the professional competence of future

specialists can be carried out in the following forms of educational activity:

- through the content of educational components in academic and educational activities (lectures, computer modeling, practical classes, game design, seminars, computational and graphic works);
- in professional and educational activities (pre-diploma practices, educational and production practices);
- in quasi-professional activities (modeling, laboratory classes, analysis of industrial situations, research of problems, term papers, business games, educational projects);
- in extracurricular educational independent activities (working with electronic resources, textbooks, participation in Olympiads, writing essays, group work, presentation of reports on professional activities).

The main resource in the formation of professional competence is the use of information technologies in conditions of forced remote interaction, supported by technological means, based on detailed self-assessment, motivated by the results of self-educational activity of students and self-control. Remote technologies ensure the use of electronic educational resources and electronic learning tools for the organization of training in higher education institutions.

We will show the possibilities that ensure the formation of professional competence in future specialists with the use of distance learning technologies:

- presentation of educational information using multimedia, and hypertext web technologies, which will contribute to high-quality learning and autonomous processing at a time convenient for the student;
- providing feedback to the user during interactive interaction;
- using automated learning management systems to acquire practical experience in solving professional problems;
- monitoring of results and advancement in education;
- automation of the processes of organizational management of the professional field and informational and methodological support of the educational process (Yaroshenko, 2019).

We will list the criteria necessary for using the quality assessment of distance education courses to form the professional competence of specialists: quality of content, social activity, information and clear learning outcomes about the course, personalization of design, media saturation of content, flexibility of content, comprehensibility of content, interactivity of content, combination of various tools training, personal interaction with the student during the training process, consultative support of the teacher, time limits.

The significant development of the education system enabled the emergence of innovative forms of organizing extracurricular independent work to form the professional competence of specialists. Online courses offered by such flagships of this field as Prometheus, Coursera, Digital Education, Diya, edX, etc., TED lectures and presentations, and personal channels on YouTube can be used to form the professional competence of specialists based on international professional experience (Kuchma, & Filatov, 2022).

When forming professional competence during the training of specialists, it is necessary to take into account the following functions in their professional activities:

- motivational and encouraging (ensures the acquisition of authority in the eyes of oneself and colleagues, self-affirmation in one's professional activity, orientation and development towards the formation of professional skills, professional motives, appropriation of professional values, the realization of creative potential);
- practical-operational (based on acquired professional skills, knowledge, and skills consisting in improvement, formation, and development of special and general abilities);
- gnostic (intensification of intellectual, cognitive activity of a specialist; assimilation of knowledge accumulated in professional activity, expansion of erudition, outlook aimed at professional future development);
- communicative (manifested in the ability to implement projects, organize the work of employees as a team, and conduct dialogue with customers and colleagues taking into account demographic, regional, national, and social factors);
- monitoring (the specialist's awareness of interests, moral character, behavior, completeness of his knowledge, and assessment of himself as a professional in his field) (Kuchma, & Filatov, 2022);
- design (involves the development and implementation of system programs, computer architecture, application programs, work with databases, etc.);
- research (provides research and development of professional schemes, analysis and synthesis of professional objects, research and development of innovative technologies in the industry, etc.);
- technical (related to the maintenance and organization of project management, computing processes, increasing the efficiency of industrial enterprises, etc.) (Striuk, 2020).

Therefore, having found out and introduced into the educational process the criteria for the qualitative formation of professional competence in the training of specialists; basic principles and professional qualities and skills of a specialist, which is an important component of the formation of professional competence; the main components of

a specialist's professional competence; forms of educational activity that are important in the formation of professional competence of higher education seekers; criteria necessary for the use of quality assessment of educational courses to form the professional competence of specialists; functions of professional training of future specialists, we conducted a formative experiment.

The goal of the formative stage of the research was the formation of professional competence in future specialists using professionally-oriented learning technology.

During the study, the set of methods, forms, and means of learning used in the organization of the educational process were considered.

The lectures covered the most complex topics that require a systematic presentation of the material. The presentation was mainly problematic. A clear and detailed identification of interdisciplinary (intersubject) connections in the block of disciplines of professional training made it possible to determine the level of education of students and the level of their assimilation of the material.

Seminars were a logical continuation of lectures. They were called to deepen, expand, and detail the knowledge obtained at the lecture stages of training and during the independent work of students, to check the effectiveness and quality of their assimilation. The seminar was like a collective discussion of the most important and difficult issues, without which it is impossible to master professional skills. The seminars were of a discussion nature, which contributed to the development of the student's independence and independence of thinking, a personal and meaningful attitude to the issues under consideration; the content of the student's speech, the logical coherence of his answer, the richness of bright details and facts, the accessibility and comprehensibility of the explanation were evaluated. At the end of the seminar, the performance of the group and each student individually was evaluated, and reflection on one's own actions was carried out.

In practical classes, students practiced professional skills: methodically and competently preparing for an educational session, defining and analyzing didactic goals, and tasks, highlighting the structure of an educational session, choosing appropriate methods, forms, means of learning, a system of evaluation, control and correction of the educational process. Carrying out educational tasks in subgroups necessitated the establishment of friendly, humane relationships. The organization of work in pairs and microgroups (4-5 people each) with the appointment of experts to evaluate the activity of each student with the inclusion of game professional situations was aimed at the development of reflection on one's own activity and behavior. Micro-teaching by students of a specific part of the lesson, and its demonstration with further analysis, which contributed to the development of the professional orientation of the activity and the formation of a professional position, was not excluded.

Independent work under the guidance of the teacher was aimed at increasing the cognitive activity of students, deepening the acquired knowledge, and eliminating gaps that arose in the framework of preparing students for educational classes.

At the same time, at the stage of the formative experiment, preference was given to such methods and forms of education as problem-based lectures, seminars-discussions, analysis of specific pedagogical and professional situations, business games (including as a form of ongoing control), preparation of educational discipline projects and their public defense on a real professional issue chosen independently by the students.

It should be noted that there is a serious shift in emphasis towards conducting training sessions using the method of practical work. This is explained by the need to implement the operational framework for the training of specialists, which provides for the training of graduates of higher education institutions at the level of professional skills and abilities, which are the main characteristics formed to the practical component of the professional competence of a graduate of a higher education institution.

The joint work of the teacher and the student acted as a means of supporting the emerging personality of the professional in those key moments when they experienced difficulties in choosing priorities, ideals, a way of behavior, and in formulating conclusions «for themselves» from the experience of professional activity.

However, in the course of the work on the design of the professional content of the discipline, students with different degrees of activity and personal perceptions of the situation were involved in the performance of the task in different ways.

At the control stage of the experiment, the results of the formative experiment were compared with the results of the ascertaining one. At the same time, the students' self-assessment of the level of their professional competence and the teacher's expert assessment, as well as the self-assessment of cognitive and professional motivations in the field of activity, were again used.

According to the results of the formative experiment, positive dynamics of all levels of professional competence among students were obtained both after studying professional disciplines and after industrial practice. The passive level had no place. An increase in the number of students who are at the imitative level was noted because there was a jump from a low level to a level below the average. The number of students who demonstrate an

actively searching and creative level of professional competence has increased significantly, while there were none at all at the ascertainment stage. The results of the study are presented in Table 3.

Table 3. Characterization of the formation of professional competence among students during the period of study at a higher education institution.

№	STAGES	LEVELS OF FORMATION OF PROFESSIONAL COMPETENCE							
		PASSIVE (A)		IMITATIVE (B)		ACTIVE SEARCH (C)		CREATIVE (D)	
		NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%
1.	Statutory	26	74,3	9	25,7	0	0	0	0
2.	Formative	0	0	14	40	20	57,3	1	2,9
3.	Control	0	0	6	17,1	26	74,3	3	8,6

Source: Own elaboration

It can be seen from the table that 57.3% of students in the formative experiment demonstrate an active-searching level of professional competence, and 2.9% – creative,

The analysis of the table shows positive dynamics in the formation of professional competence among future teachers during the period of study at a higher education institution.

Summarizing the results of the research and experimental work carried out as part of the study, it is appropriate to draw the following conclusions: our approach to training allowed to increase the professional competence of future specialists, ensuring the unity of the formation of its components: theoretical, practical and motivational.

The results of experimental training of students using professionally oriented learning technology allowed us to conclude that the purpose of the study was confirmed. This means that the formation of professional competence of future teachers in institutions of higher education is possible with the optimal selection of criteria for the qualitative formation of professional competence during the training of specialists; principles and professional qualities and skills of a specialist; components and functions of professional competence of a specialist; forms of educational activity; criteria necessary for the use of quality assessment of educational courses to form the professional competence of specialists.

The study of the problem of the formation of professional competence made it possible to formulate the features of quality professional training of future specialists:

- the practical focus of the specialty on the teaching of fundamental disciplines requires the use of a special complex of forms of organization and teaching methods for mastering the educational process by the methods of professional activity;
- rapid updating of knowledge through the introduction of innovative learning technologies, which requires constant restructuring of the content of educational programs and their considerable flexibility;
- the need to strengthen fundamental training to qualitatively form the professional competence of specialists and obtain the opportunity to effectively acquire innovative knowledge to ensure professional mobility;
- directing the content of the formation of professional competence of specialists to the manifestation of initiative, the development of non-standard thinking, interaction in professional activities, and the ability to work independently and in a team;
- it is necessary to use an integrated approach to build the content of the formation of professional competence of specialists;

in connection with the existence of a gap in time between its formation and use, the optimization of the terms of applied and fundamental training of specialists is a significant factor specifically for specialists in innovative professions, in particular, computer technology, which is updated too quickly (Striuk, 2020).

CONCLUSIONS

The content of the concepts “competence”, and “professional competence” was considered. The main types of fundamental competencies are highlighted. The importance of the nature of activity for the formation of professional competence in the training of specialists, which is the main characteristic feature of the competence approach, has been proven. The criterion for the qualitative formation of professional competence in the training of specialists is defined as the achievement of a positive result for the students of education.

The principles and professional qualities and skills of a specialist are highlighted, which are an important component of the formation of professional competence (evaluation and analysis of alternatives, the ability to apply the information found, logically building a course of problem-solving in non-standard situations, find new approaches to professional activity, navigate in unexpected situations).

An important personal characteristic of the formation of the professional competence of a specialist is the creative process as a unity of emotional, intellectual, and volitional

qualities of the individual, which are embodied in initiative, intuition, flexibility, resourcefulness, and independent thinking.

When forming the professional competence of a specialist, the importance of quality for achieving social mobility and professional success is emphasized (perseverance in achieving a goal, self-control, adaptability, psychological maturity, the ability to make decisions, flexibility, and properly establishing relationships with the environment).

The main resource in the formation of professional competence is the use of information technologies in conditions of forced remote interaction. The main components of a specialist's professional competence are singled out, and its mandatory content is revealed. The importance and relevance of distance education and mixed learning, forms of educational activity are shown; opportunities that provide future specialists with the formation of professional competence with the use of distance learning technologies.

The criteria are necessary for using the quality assessment of distance education courses to form the professional competence of specialists are listed.

In the formation of professional competence during the training of specialists, it is necessary to consider the performance of functions, which are analyzed in the article.

We conducted an experimental study to consider the ways of forming the professional competence of a specialist as a necessary component of improving the higher education system as a whole, the purpose of which is the high-quality training of an educated specialist and the formation of the necessary skills, abilities, and knowledge of a professional nature.

The study of the problem of the formation of professional competence made it possible to formulate the features of high-quality professional training of future specialists.

Further research will be aimed at clarifying the role of the organization of extracurricular independent work to form the professional competence of specialists.

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