

## ***METHODS OF DEVELOPING PROFESSIONAL COMPETENCIES OF FUTURE TEACHERS***

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***Abstract-*** This article discusses the formation and content of professional competence in future vocational education teachers, the role and importance of basic competencies in their preparation for professional activity, the mechanism of formation of students' knowledge, skills and competencies in general and specialized disciplines through interdisciplinary relations. and issues such as the integrative-differential approach.

***Keywords:*** future teachers, vocational education, competence, competence, professional competence, interdisciplinary integration, integrative-differential approach

One of the conceptual rules for updating the content of vocational education in the 21st century is a competency-based approach. Its implementation in practice will lead to a new approach to the content, methods and technology of education.

One of the key units of updating the content of education is the concept of competence. It expresses the integrative nature of the person, in other words, the personal qualities of the future specialist – knowledge, skills, practical experience, abilities, value orientations. Competence ensures and strengthens an individual's readiness for professional activity [2].

The interaction of integration and differentiation in the science of pedagogy has been proven, which allows to regulate vocational education, to create the necessary conditions for building a hierarchical model. In modern society, the level of development of a country is determined not only by its technical condition, but also by the professional competence of specialists trained in higher education institutions.

Modernization of the education system, changes in the system of vocational education make it necessary to develop the professional competence of the staff of the educational institution. At present, the state educational standards of higher professional education are being introduced, and innovations are being widely introduced in the content and technology of education aimed at improving the quality of training of future teachers of vocational education.

The English concept of "competence" literally means "ability". The content means "effective use of theoretical knowledge in practice, the ability to demonstrate a high level of professionalism, skill and talent." The concept of "competence" has entered the field of education as a result of psychological research. Competence, therefore, means "the ability of a specialist to behave in unusual situations, to communicate in unexpected situations, to communicate in a new way in dealing with competitors, to perform ambiguous tasks, to use conflicting information, to have a consistent and evolving plan" [3].

Professional competence is the acquisition by a specialist of the knowledge, skills and competencies necessary for the performance of professional activities and their application in practice at a high level.

Professional competence implies the acquisition of integrative knowledge and actions in each independent direction by the specialist, rather than the acquisition of individual knowledge and skills. Competence also requires the constant enrichment of professional knowledge, the ability to learn new information, to

understand important social requirements, to search for new information, to process it and to apply it in their work.

*Professional competence is evident in the following cases:*

- in complex processes;
- when performing indefinite tasks;
- when using conflicting information;
- being able to have a contingency plan

*Professional competent specialist:*

- consistently enriches their knowledge;
- assimilates new information;
- deeply understands the requirements of the time;
- seeks new knowledge;
- processes them and uses them effectively in their practical activities.

On the basis of professional competence, we briefly describe the essence of the reflected qualities. They include: 1) social competence; 2) special competence; 3) personal competence; 4) technological competence; 5) extreme competencies.

**1. Social competence** – the ability to be active in social relations, the acquisition of skills, the ability to communicate with the subjects in professional activities.

**2. Special competence** – preparation for the organization of professional and pedagogical activity, rational solution of professional and pedagogical tasks, realistic assessment of results, consistent development of knowledge, skills and abilities, on the basis of this competence psychological, methodological, informational, creative, innovative and communicative competence is conspicuous. They contain the following content:

- *psychological competence* – the ability to create a healthy psychological environment in the pedagogical process, the organization of positive communication with students and other participants in the educational process, the ability to understand and eliminate various negative psychological contradictions in a timely manner;

- *methodological competence* – a methodologically rational organization of the pedagogical process, the correct definition of forms of educational or educational activities, the appropriate choice of methods and tools, the effective use of methods, the successful use of tools;

- *information competence* – search, collection, sorting, processing of necessary, important, necessary, useful information in the information environment and their purposeful, appropriate, effective use;

- *creative competence* – a critical, creative approach to pedagogical activity, the ability to demonstrate their creative skills;

- *innovative competence* – the promotion of new ideas to improve the pedagogical process, improve the quality of education, increase the effectiveness of the educational process, their effective implementation in practice;

- *communicative competence* – the ability to communicate sincerely with all participants in the educational process, including students, to listen to them, to have a positive impact on them.

**3. Personal competence** – consistent achievement of professional growth, improvement of skills, demonstration of their inner potential in professional activity.

**4. Technological competence** – mastery of advanced technologies, enrichment of professional and pedagogical knowledge and skills, the use of modern tools, techniques and technologies.

**5. Extreme competence** – the ability to make rational decisions, to act correctly in emergencies (natural disasters, technological process failure), in the event of pedagogical conflicts [3].

According to N.A.Muslimov and K.Abdullaeva, competence is the level of independent and creative application of the acquired theoretical knowledge, skills and abilities in practice, which is formed in the student's internship and postgraduate activities [4].

The concept of competence is defined as the ability to apply knowledge, skills, personal qualities and practical experience to succeed in a particular field [5].

The most complete psychological forms of professional development of the individual in the process of professional self-management in modern socio-economic conditions, the developmental features of

professional competence were studied by E.F.Zeer. Evaluates professional competence as one of the main components of the structure of professional activity, as well as personality orientation, professionally important qualities, professionally important psychophysiological characteristics.

In T.M.Sorokina's research, a teacher's professional competence is interpreted as a unit of theoretical and practical training for the implementation of pedagogical activities. His teaching competence is one of the stages of professionalism that is the basis of a teacher's pedagogical activity [1].

According to V.N.Vvedensky, the concept of "professional competence" is characterized by a wide range of content, integral features that combine such common concepts as "professionalism", "qualification", "professional competence". However, cases of identification of the concept under consideration in conjunction with that concept are still often "competent". Competence is a set of personal, and qualified professional or functional characteristics.

M.I.Lukyanova understands the peculiarities of a person who has a high level of professional training for pedagogical activity and effective interaction with students in the learning process on the basis of the psychological and pedagogical potential of the teacher. As an integral part of psychological and pedagogical competence, he considers blocks of psychological and pedagogical directions.

A.V.Khutorskoy distinguishes between the concepts of "competence" and "competence" from the concepts of "synonym used". Competence is a set of interrelated characteristics of an individual (knowledge, skills, methods of activity), defined for specific topics and processes and necessary for the qualitatively effective production of them.

G.M.Kodjaspirova believes that "a teacher must have certain pedagogical competencies in order to be a qualified teacher" [5].

"Competence is a general ability based on knowledge, experience, values and intentions acquired through education. Does not fall into competent knowledge or skills; Competence does not mean being a scientist or an educated person" [3]. A distinction must be made between competence and skill. Ability is a characteristic feature that can be learned from the observation of action, competence-actions, skills in a particular situation. Thus, skills are manifested as competence in practice. Competence is something that enhances skill, movement. Competence is formed as a result of conscious activity.

## **MATERIALS AND METHODS**

The state education standard defines professional and general competencies, ie the knowledge, skills and competencies that graduates must acquire. They can be achieved through an integrated approach to the development of basic vocational education programs [3]. The variable part of the program allows to reflect the specifics of the educational institution, the region, the needs of employers in the region for specialists with specific professional competencies.

In our view, it is integrative education (integration of education) that plays an important role in the process of formation of professional competence of future professionals and their future professional activities [2].

The modern labor market, presenting the growing demands on the quality of education, leads to increased professional competence and professional training of future teachers of vocational education, which in turn increases competition among graduates of higher education institutions, including technical higher education. The teacher, who is the main direction in the field of education today, not only covers the educational process, but also directly participates in the formation of the content of education, its renewal. He is shaping the future professional as a person who is both competitive and capable of self-improvement. However, in the process of pedagogical activity, most teachers experience difficulties at different stages of complexity.

If the initial qualification of the specialist implies only the suitability for the workplace and the acquisition of narrow information, "competence" suggests the acquisition of knowledge not only in general, but also in a wide range of areas [4]. The readiness and ability of a specialist to successfully implement their skills implies the improvement of the efficiency and quality of their work.

Most researchers recognize competence as the acquisition of skills necessary for effective professional activity in accordance with pre-defined requirements for teacher training [5].

Different tasks related to professional activity can be defined as a developed set of student personality traits. N.A.Muslimov and other researchers working in this field, adhering to the concept of competence, use the

professional competence of students of technical higher education institutions as an association of personal qualities, which will help them to successfully implement their knowledge, skills and abilities in engineering. stressed.

In turn, a competent approach requires significant changes in educational technology. Therefore, higher education institutions today face the task of developing special technologies and methods of their implementation in the educational process.

Unfortunately, the essence of interdisciplinary integration competence is not fully covered in higher education institutions of the country, as there are very few approaches to the theory and methodology of vocational education, as well as technologies aimed at shaping the professional competence of students.

But we, like many researchers, believe that the use of meaningful education and interdisciplinary links is not yet sufficient to form the professional competence of future professionals in technical higher education institutions [4]. Because in meaningful education, modeling of professional and social aspects of future engineering activities takes place, and interdisciplinary integration, in turn, emerges as a unifying element in different fields of science.

A modern graduate - a future technical specialist (teacher of vocational education) - should be able to apply a set of knowledge in various disciplines in their professional activities. Interdisciplinary integration can be interpreted as a process of combining disciplines based on knowledge (knowledge) and technological problems.

For us, interdisciplinary integration represents a set of educational goals, principles, and meanings in creating a broad-based interaction of all academic disciplines. Therefore, professional competence begins to develop in the first stage of student education, aimed at giving senior students quick optimal decisions in any complex professional situation, in which the formation of skills to perform certain actions independently can be achieved through interdisciplinary communication.

In order to achieve the set goals (objectives) for the formation of professional competence of students through interdisciplinary integration, teachers of higher education institutions need to do this systematically [2].

For example, "Tractors and cars", "Agricultural machinery", "Agricultural hydraulic reclamation", "Hydraulics", "Hydraulic structures", "Pumps and pumping stations", etc. Integrating disciplines, the following active and interactive teaching methods are used in the training data: clusters, media education, discussions, etc.

The organization of such classes helps students not only to separate the sciences of the technical cycle from the humanities, but also to find their interrelationships, and a rational and conscious approach to future work. Practical classes with students can also be organized using interdisciplinary links.

For example, by combining the disciplines of "Hydraulic Engineering" and "Economics of Water Resources", students not only consider the activities related to the rehabilitation of canals and their facilities, but also try to calculate their economic efficiency independently. For example, in the study of "Resistance of Materials", "Physics" and "Chemistry" by combining them (integrating: interdisciplinary, interdisciplinary links, the organization of integrated lessons), students can be given tasks related to finding the structure and properties of a material.

The use of information and communication technologies in interdisciplinary laboratory work can also be found in the learning process, as well as its application, for example, in the disciplines of "Theoretical Mechanics" and "Educational Technology" can identify tasks in this area and develop with innovative discoveries. Joint interdisciplinary seminars on "Physics", "Higher Mathematics" and "History" allow students to discuss historical issues in the development of science, the work of prominent scientists, their impact on socio-economic development.

A single approach to interdisciplinary communication makes it difficult to determine the assessment of student knowledge between the humanities, general sciences, and special cycle disciplines. That is, the level of knowledge of students, acquired in the study of the humanities and general sciences, may not be sufficient for the study of special subjects.

Therefore, this knowledge is necessary not only for a collaborative approach to the development of cyclophane programs for faculty to develop subject content, but also for an assessment of knowledge and skills.

Throughout the general education process, professional competence through observation was formed and implemented at various stages of the acquisition of sufficient knowledge. If general education technologies are used in teaching the sciences of different cycles, interdisciplinary integration will allow to get the best results.

Active and interactive methods of education, including the use of complex computer programs and special laboratory equipment, are very important for technical higher education institutions.

Every year in the educational process of technical higher education institutions appear new disciplines aimed at solving problems. This is not surprising, because the rapidly developing industry and economy need to change the minds of the people and make new discoveries for humanity. When there is a need for such special disciplines, for example, in the field of "Water Management and Land Reclamation" of the higher education institution will be created measures to improve land reclamation, develop innovative technologies for effective irrigation and land reclamation, agricultural mechanization discoveries (inventions) It turns out that initially it is more difficult to find interdisciplinary relationships with other cycle sciences, so an expert evaluation method can help in constructing a scheme between disciplines to implement interactions. At the intermediate points, teachers act as experts, who read the lecture materials using interdisciplinary links, and the final point can be checked by independent (impartial) teachers or online testing.

It should also be noted that the diagnosis of students' knowledge, which they acquire in the course of interdisciplinary communication, should be carried out regularly in the intermediate stages - checkpoints and where knowledge testing is planned - to the final point.

Thus, professional activity is justified by interdisciplinary integration, if students of technical higher education institutions perform integration tasks with regular use and practice, only practical training will strengthen the knowledge gained in the study of theoretical materials. In performing this or that laboratory work, by solving a complex learning task, the student acquires the practical skills necessary for a successful professional activity. The graduate has a perfect mastery of professional skills, is able to successfully compete in the labor market, allows the creative use of professional skills, allows to achieve the highest quantity and quality.

In educational (training) programs, separate interdisciplinary communication can not be the only goal, a single integrated approach is important, with the help of which the idea of interdisciplinary is realized in the whole educational process. Representatives of pedagogical sciences argue that interdisciplinary integration in the learning process can be implemented through the use of active and interactive pedagogical methods, technical means and organizational forms of education listed above.

## RESULT AND DISCUSSION

Interdisciplinary integration of higher education students plays an important role in improving the quality of scientific, theoretical and practical training of students, as the problems of implementation of the interdisciplinary approach are solved at each stage not only the curriculum, but also the education and development of modern students.

Comprehensive (universal), creative, developing future specialist (professional) personality can be formed only in the context of an integral pedagogical process, professional competence of the engineer – methods and goals based on the general principles of each stage are built on the ultimate goal. That is why interdisciplinary integration is an important condition for the education and training of teachers of vocational education in technical higher education institutions.

In the preparation of vocational education professionals for professional activities, the processes of integration and differentiation emerge as the development of a unified vocational education trend. On this basis, we have identified an integrative-differential approach as a pedagogical phenomenon that prepares future teachers of vocational education. It involves the integration of knowledge and change in vocational education through the establishment of a dynamic balance between processes of integration and the

implementation of an educational process that can work in different vocational and vocational education systems.

Multifunctional vocational education is based on the following principles:

- systematic – the formation of several connections of a complex object, aimed at revealing the integrity of the object, protecting its mechanisms and their conduct on the basis of a single law;
- integrity – reflects the relative autonomy, independence of the object from the environment, the internal unity;
- subjectivity – involves the student to be a strategy of their activities in terms of their abilities, setting and adjusting goals, being aware of the reasons, carrying out independent activities and evaluating them on purpose, making life plans;
- integrative – provides the integration of events, parts, elements into a whole (orderly and structural);
- diversification – the expansion of the types of educational tools, types of services involves the formation of new activity planning.

The above principles include a more specific set of principles: compliance (meeting the demand (need) for graduates with the qualities of professional training); quality of education (increasing the quality of training and the level of requirements for the qualifications of professional staff); person-centered (meeting the needs of the individual in various educational services); freedom of choice (expansion of the freedom of educational institutions in the provision of educational services).

Thus, the following stages of the organization of continuing vocational education on the basis of an integrative-differential approach are identified:

- organizational-targeted approaches, which determine the principles of education, professional and specialist education, support for the selection of a person's qualities for improvement;
- the stage of realization of the personality of students of I-IV courses of procedural activity is integrative and differentiated training of teachers of vocational education (theoretical, practical, educational and research, general culture) depending on the field of education (knowledge of the student's status, professional self-knowledge, self-professional and professional-pedagogical training);

Implementation of the mechanism of improving the professional training of vocational education teachers on the basis of an integrative-differential approach (figure 2) is carried out step by step in accordance with the formation of a specialist personality in each course of education. At the stage of understanding the status of the student (status, 1st year) there is a holistic development of the individual, the development of the role of his readiness for a new professional activity and the acquisition of the general scientific basis of the profession.

During the period of a person's exposure to others, students usually have no differentiation in their roles. Learners are attached to the student lifestyle, the original forms of community life. At this stage, the student has established a relationship of preparation for a new professional activity, adapting to high school life.

Integration of pedagogical-psychological theoretical and practical knowledge in preparation for professional activity, interdisciplinary integration, integration of pedagogical and technical knowledge in diagnostics of professional preparation requires a systematic approach to improving students' professional competence. Therefore, a systematic approach was taken to ensure the integration of pedagogical and technical knowledge in the diagnosis of professional training. Based on the classification of stages of formation of important personal and professional qualities in future professionals, the mechanism of development of competencies such as mobility, reflexivity, integrative in the areas of theoretical, practical, research training has been improved.

At the stage of professional self-knowledge (II course) the special development of students' personality continues, their cultural needs and requirements are formed. They include all forms of education and upbringing, not only to achieve trust and independence, but also to take an active part in the work of public organizations and movements. During this period, the focus is on the general professional sciences.

At the stage of professional self-determination (III year) the attention of students to the disciplines of specialization is strengthened, the motives for improving the preparation for professional activity are strengthened. At this stage, specialization begins, interest in research increases, they learn the characteristics

of their chosen profession. At the same time, the social activity of students is developed and, as a rule, their level of self-organization is increased.

The stage of improving professional training (vocational training) (IV course) encourages the acquisition of methods and technologies of specialist work related to the establishment of future activities. At this stage, the need to choose a place of practice to apply in professional practice becomes more conscious. At each stage of improving the professional readiness of students, the main focus is on these specific qualities – the characteristics of the specialist to improve professional preparation.

As a theoretical direction of the above ideas, the content of vocational training within the State Educational Standards implements all blocks and models; practical direction – provides various types of practice – educational, pedagogical-acquaintance, pedagogical, production, pre-graduation, etc.; research direction – opens the organizational basis of vocational education activities in the system of preparation for professional activity, according to which it can be built in the educational process or in parallel with it; spiritual-enlightenment and moral direction – provides organization of cultural-recreational, professionally-oriented, civil-legal, information-cognitive, spiritual-enlightenment and public events in various types of organized activities, etc.

## CONCLUSION

In conclusion, we focused on the issues of integration in technical higher education, integration of pedagogical and psychological theoretical and practical knowledge, interdisciplinary integration, integration of pedagogical and technical knowledge in the diagnosis of professional training and improving student competence. The dialectical process of organizing a system of membership aimed at ensuring the full range of professional training is internally contradictory and takes place in the struggle against opposing tendencies such as integration and disintegration, analysis and synthesis. One of the important factors that ensure integration in teaching in a system of continuing education is continuity. Membership is a privatized function of the educational system and the provision of integrative processes that lead to the integrity of education and its outcomes. At all stages of the system of continuing education, the organizational tools used in the formation of integrated knowledge and ensuring the continuity of content and form in the educational process play an important role. An integrative approach to education, in this case, the expression of a targeted approach to the integrated system in the context of education, plays an important role in raising the level of professional training of future professionals.

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