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FORMATION OF PROFESSIONAL COMPETENCE OF STUDENTS OF TECHNICAL SPECIALTIES

ФОРМИРОВАНИЕ ПРОФЕССИОНАЛЬНОЙ КОМПЕТЕНТНОСТИ СТУДЕНТОВ ТЕХНИЧЕСКИХ СПЕЦИАЛЬНОСТЕЙ

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Abstract. *The paper considers the role and place of organizational and pedagogical competence in the process of training students of technical specialties, as well as in the professional work of future engineers. Interdisciplinary integration is considered as one of the methods of forming professional competence of technical students. The necessity of forming organizational and pedagogical competence as a component of professional competence of future specialists of technical orientation is substantiated.*

Key words: *competence, technical specialty, professional competence, organizational and pedagogical competence.*

Introduction.

The level of development of a country in modern society is determined not only by the state of its technical potential, but also by the professional competence of specialists trained in higher educational institutions. The modern labor market, presenting today with increased requirements to the quality of education, competence and professional readiness of future specialists, in turn, leads to increased competition among graduates of higher education institutions, including graduates of technical specialties.

If the former qualification of a specialist meant only compliance with the workplace and possession of the narrow information necessary in a certain activity, and the students' education was reduced to standard knowledge, skills and skills, then "competence" is distinguished primarily by the fact that it requires knowledge not only of a generic kind, and in a certain broad field, the ability and willingness to successfully implement their skills, while improving the quality and effectiveness of their activities. The realization of such an idea - the comprehensive preparation, development and formation of the personality of modern citizens as professionals, professionals in their field and as members of the collective and society, lies just at the heart of the competence approach, which is aimed at linking professional competence and the content of education. Many researchers, in particular A.V. Khutorsky, are aware of competence as mastering skills that correspond to pre-determined training requirements necessary for effective professional activity. Competence can be identified as a set of developed personality traits of the student, which provide readiness to perform various functions related to professional activities. In the understanding of A.V. Khutorskogo, E.V. Perehozhevoy and other researchers working in this field, the professional competence of students in technical specialties - the formed association of personality traits, which will subsequently

contribute to them in the successful implementation of their knowledge, skills and skills in engineering [1, 2].

The need for the formation of organizational and pedagogical competence among students of technical specialties, as a component of professional competence, will be considered in this paper.

Organizational and pedagogical competence should reflect actions aimed at implementing the pedagogical plan through a specific organization of interaction between the engineer and the production team. A future engineer needs to be able to plan work; to combine individual and collective activities; motivate the team and be able to coordinate its actions; carry out self-monitoring, control and accounting work; be able to distribute the work among the members of the collective and delegate organizational functions to them in a timely manner. The organization of work with the team implies the ability to properly plan and control it. Organizational and pedagogical abilities will help the engineer to express himself and organize the team, to rally him, to inspire him to solve important tasks, and to organize his own work correctly.

The problem of developing organizational competencies in the system of vocational training was dealt with by such scientists as IA Zimnyaya, A.S. Belkin, A.V. Khutorskoy, A.G. Bermus, MA Choshanov, A.M. Aronov, G.P. Shchedrovitsky, OE Lebedev, NA Ershova, A. Ya. Magaberidze, LI Umansky and others [3].

The main text. Competent approach requires significant changes in educational technologies. Therefore, today the universities have to develop special technologies and methods for their implementation in the learning process [4, 5].

Formation of professional competence of the future specialist of technical specialty is unthinkable without contextual training and application of interdisciplinary communication. Since contextual learning involves the modeling of professional and social components of future engineering activities, and interdisciplinary integration, in turn, acts as a unifying link in the knowledge of various fields of science. In addition, today there has been a need for research activities aimed at replenishing the total volume of theoretical knowledge and scientific achievements that can become the basis of innovative production technologies. A modern graduate - a future technical professional - should be able to apply the knowledge of various disciplines in his professional activities.

At the present time, the general educational, technical, and cultural level of participants in the production process has significantly increased. This requires the introduction of certain adjustments in the forms and methods of working with future engineers, the scientific setting of tasks for organizational and pedagogical preparation for work. There is considerable experience on these issues in the industry, many scientific recommendations are successfully introduced into practice, which leads to an increase in labor productivity. Our universities, in turn, contribute to improving the process of preparing students, because they created favorable external conditions for the disclosure of pedagogical abilities of each trainee. The firm will of the engineer, as one of the indispensable elements of management, must be supplemented by the ability of each leader to manage the team. This will give him a

number of advantages: he will give an opportunity to set before him tasks of high complexity in full confidence of their decision; and successfully cope with the high organizational and pedagogical pressures arising in the management process.

In the process of teaching students, interdisciplinary integration seems to be the highest form of unity of goals, principles and meaning of education, creating a large-scale interconnection of all educational disciplines of the educational program. Therefore, it is necessary to start developing professional competence already at the first stage of students' training, so that they can develop their own skills to independently perform certain actions aimed at promptly finding optimal solutions in any difficult professional situations. For this, it is necessary to use interdisciplinary connections. Initially, you can form a team of students studying in different areas of training, for joint implementation of educational and scientific assignments. They will not only learn the characteristics of professional activity, but also develop communication skills, develop skills of interaction in the team. This can be achieved in the process of performing research and development projects, integrated course projects. The task of scientific and pedagogical workers is to direct students to an independent and creative work, to seek a solution to a particular problem by discussing different points of view, the realization of their ideas. Students should understand that working together on one task, it is possible to form a model for implementing innovative projects.

Graduates of higher educational institutions of technical orientation, in terms of specific activities, will not only be able to manage the production process or the technical training of subordinate units, but also to train people and train themselves, absorbing and transferring the experience of the older generation and achieving the scientific and technical process. Future engineers during the training in the university and further in the production team will have to achieve a certain level of pedagogical skill, in which he will be able to increase productivity through organizational and pedagogical activities in a timely and accurate manner.

Combining "Resistance of materials", "Physics" and "Chemistry", students can be offered tasks related to the search for the composition and properties of materials, etc. Interdisciplinary laboratory work using information and communication technologies can also find its application in the educational process, for example : "Theoretical mechanics", and "Innovative management" - it is possible to develop tasks with the identification and application of innovative discoveries in this field. Joint interdisciplinary seminars on disciplines "Physics", "Mathematics" and "History" will allow students to consider the historical issues of science development, biographies of outstanding scientists, their impact on social and economic progress. The interrelation of the subjects of the mathematical cycle with "Theoretical mechanics" or with the discipline "Resistance of materials" is obvious, since in the latter the mathematical apparatus is studied, and the connection between such disciplines as "Physics" and "World culture" is not so noticeable, but to understand it that graduates of technical specialties will work in the multicultural environment of transnational corporations. Therefore, the ability to apply the knowledge of different disciplines in the aggregate, the ability to transfer ideas and methods from one science to another will be the key to the successful preparation of students for future

professional activity. A single approach of interdisciplinary communication faces the difficulty of determining the evaluation of students' knowledge between the disciplines of the humanities, general scientific and special cycles. That is, the level of knowledge of students, acquired in the study of disciplines in the humanities and general scientific departments, may be insufficient to study special disciplines. In order for this knowledge to be sufficient and implemented, the faculty should not only jointly approach the development of curriculum programs, study the content of disciplines, carefully study approaches to the delivery of educational material, but also assess the knowledge and skills that are formed at various stages mastering of knowledge in the course of the general educational process, through the prism of professional competence, an integral part of which is organizational and pedagogical.

Summary and Conclusions. For students of technical specialties, active and interactive teaching methods involving the use of complex computer programs and specialized laboratory equipment are especially important. The formation of organizational and pedagogical competence, which is very important in the professional activity of graduates of technical colleges, contributes to the formation of professional competence in general. It is advisable to use the methodology of interdisciplinary integration.

References:

1. Hutorskoy A.V. Klyuchevyie kompetentsii kak komponent lichnostno-orientirovannoy paradigmyi obrazovaniya / A.V. Hutorskoy // Narodnoe obrazovanie. 2003. - # 2. - pp. 55–61.

2. Perehozheva E.V. Formirovanie professionalnoy kompetentnosti studentov tehnicheskih vuzov na osnove mezhdistsiplinarnoy integratsii: avtoref. dis. kand. ped. nauk / E.V. Perehozheva. Chita, 2012. - 23 p.

3. Kozlov P.G. Neobhodimost vvedeniya v obrazovatelnyie standartyi ponyatiya «organizatsionno-pedagogicheskaya kompetentsiya» // Sovremennaya pedagogika. 2015. - # 2.

4. Koren E.V. (2015). Primenenie programmyi ELECTRONICS WORKBENCH pri izuchenii elektrotehniki v vyisshey shkole [Application of the ELECTRONICS WORKBENCH program in the study of electrical engineering in higher education] in *Naučnye trudy SWorld* [Scientific works SWorld], issue 3(40), vol. 6, pp. 85-91.

5. Koren E.V. (2017). Primenenie informatsionnyih tehnologiy dlya obucheniya studentov [The use of information technology for teaching students] in *Naučnye trudy SWorld* [Scientific works SWorld], issue 5, vol.3, pp. 23-30.

Аннотация. *В работе рассматривается роль и место организационно-педагогической компетентности в процессе обучения студентов технических специальностей, а также в профессиональной деятельности будущих инженеров. Рассмотрена междисциплинарная интеграция как один из методов формирования профессиональной компетентности студентов технических специальностей. Обоснована необходимость формирования организационно-педагогической компетентности как составляющей профессиональной компетентности будущих специалистов технической направленности.*

Ключевые слова: *компетентность, техническая специальность, профессиональная*

компетентность, организационно-педагогическая компетентность.

Литература:

1. Хуторской А.В. Ключевые компетенции как компонент личностно-ориентированной парадигмы образования / А.В. Хуторской // Народное образование. 2003. - № 2. - С. 55–61.

2. Перехожева Е.В. Формирование профессиональной компетентности студентов технических вузов на основе междисциплинарной интеграции: автореф. дис. канд. пед. наук / Е.В. Перехожева. Чита, 2012. - 23 с.

3. Козлов П.Г. Необходимость введения в образовательные стандарты понятия «организационно-педагогическая компетенция» // Современная педагогика. 2015. - № 2.

4. Корень Е.В. Применение программы ELECTRONICS WORKBENCH при изучении электротехники в высшей школе. // Научные труды SWorld: международное периодическое научное издание. – Иваново: Научный мир, 2015. – Вып. 3(40). - Т. 6. – С.85-91.

5. Корень Е.В. Применение информационных технологий для обучения студентов. // Научный взгляд в будущее: международное периодическое научное издание. – Одесса: КУПРИЕНКО СВ, 2017.– Вып. 5. – Т. 3. – С.23-30.

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