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GENERAL TECHNICAL KNOWLEDGE IN THE VOCATIONAL TRAINING OF FUTURE WORKERS IN VOCATIONAL SCHOOLS

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Abstract

The article considers methodological provisions for the unification of educational material on technology in vocational schools. It is proved that one of the effective ways to increase the level of knowledge of students is the grouping of professions on the basis of general educational technical training. It was determined that insufficient attention was paid to the issues of training workers for groups of related professions.

Key words*:* grouping of working professions, unification of curricula, analysis of technical objects, methodological approach, innovations.

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ЗАГАЛЬНОТЕХНІЧНІ ЗНАННЯ У ПРОФЕСІЙНІЙ ПІДГОТОВЦІ МАЙБУТНІХ РОБІТНИКІВ В УМОВАХ ПТНЗ

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Реферат

В статті розглянуто загально-методичні положення уніфікації навчального матеріалу про техніку у ПТНЗ. Доведено одним із дійових шляхів підвищення рівня знань учнів є групування професій на основі загально-технічної підготовки. Визначено, що питанням підготовки робітників за групами споріднених професій приділено недостатньої уваги.

Ключові слова: групування робітничих професій, уніфікація навчальних планів, аналіз технічних об'єктів, методологічний підхід, інновації .

ОБЩЕТЕХНИЧЕСКИЕ ЗНАНИЯ В ПРОФЕССИОНАЛЬНОЙ ПОДГОТОВКЕ БУДУЩИХ РАБОЧИХ В УСЛОВИЯХ ПТУ

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Реферат

В статье рассмотрены методические положения унификации учебного материала о технике в ПТУ. Доказано, что одним из действенных путей повышения уровня знаний учащихся является группировка профессий на основе общеобразовательных технической подготовки. Определено, что вопросам подготовки рабочих по группам родственных профессий уделено недостаточное внимание.

Ключевые слова: группировка рабочих профессий, унификация учебных планов, анализ технических объектов, методологический подход, инновации.

In today's conditions of socio-economic change, the purpose of vocational education is not only to provide the profession to citizens, but also to ensure that students acquire the entire system of relevant professional knowledge, skills and abilities. Achievement of this goal is possible by increasing the efficiency of education, mastering modern pedagogical technologies, which contribute to the formation of readiness to solve new industrial relations and changes in the nature and content of labor.

Modern life is developing at a rapid pace, so the system of vocational education should evolve and change. In Ukraine, a new educational system is being formed, which is oriented towards entering the world educational space, is being accompanied by significant changes in the pedagogical theory and practice of the educational process. This leads to the emergence of educational innovations that are designed to substantially change the educational process. Of particular interest are the content and the method of forming general technical skills of future workers of mechanical technologies in the process of studying general technical and special disciplines and production training.

Analysis of recent research and publications

In the technical training of students of vocational schools there are a number of significant disadvantages: insufficient level of general technical orientation when considering the constructive foundations of various technical objects; lack of readiness to transfer knowledge from one technical object to another; not formed ability to determine the main functional bodies of technical objects, etc. Theoretical fundamentals of general technical training of student youth are highlighted in the writings of P. Atutov, S. Batishev, J. Gushuley, G. Tereshchuk, D. Tcherzhevsky and others. The overwhelming number of works is devoted to the definition of various criteria for the classification of technical objects, the structure of technical systems, the definition of the main functional bodies of technical objects, etc. The question of the training of workers by groups of related professions is paid insufficient attention, which is determined by the subject of our study.

The purpose of the paper is to highlight the main theoretical positions of grouping professions on the basis of general technical training of students of vocational schools.

The main results of the study. The main objective of vocational education is the formation of the professional readiness of the workforce, which can be considered as a system characteristic that determines the process of successful implementation of professional

functions provided with the necessary and sufficient complex of professionally important personal qualities in real production conditions. Modern production requires training of workers of a wide profile, which also possesses the necessary knowledge of the structure and principle of the various systems of machines, the ability to use complex control equipment, independently make calculations, set up and repair equipment, etc.

Integration as a methodological approach contributes to ensuring creativity, compatibility, and unity of the content of education. Innovative developments regarding the content of education are somehow related to the ideas of integration [2; 6]. An important place among such new models is integrated models. Requirements for graduates of vocational education establishments that take into account not only the state of science and the present production, but also the prospects for its development in the future. Therefore, to select the content of the teaching material of general technical and special disciplines, it is necessary to come from predictive positions. The results of theoretical analysis and generalization of practical experience can reveal a number of contradictions that objectively exist in a vocational school. They are due both to the discovery of new facts and connections, and to the emergence of new queries of practice that require the development of new theoretical knowledge. These contradictions arise between typical curricula and the integrative nature of professional knowledge at the present stage of development of society; an increase in the volume and complexity of the content of knowledge and their ineffective curtailment and archiving in the current system of learning; outdated content, forms and methods of teaching and modern requirements to the level of general and general technical training of a graduate of a vocational school; the presence of a large number of integrated courses and inadequate theoretical substantiation of their content and forms and methods of study; the requirements of taking into account the peculiarities of teaching methods of integrated knowledge and the traditional system of training teachers and methodologists, etc. [2].

The analysis of these contradictions outlines the problem of theoretical and methodological substantiation of teaching general technical and general subjects in the vocational school. Such concrete ways are the development of the foundations of didactic integrology, the development of theoretical and methodological basis for constructing integrated courses, scientifically based methodological recommendations on the organization of professional training of specialists, the methods of integrative training of subjects of general technical and general education cycles in vocational schools, the formulation of the basic requirements for the specifics of the work of teachers these disciplines, etc.

One of the effective ways to improve the knowledge of students is to group professions on the basis of general technical training. At the same time, it is important to adhere to two general methodological principles:

1. Unification of the training material about the technique by occupational groups. We proceed from the possibility of grouping professions on the basis of the basic teaching material about the technique. Obviously the problem of determining the educational material as a basic or accompanying is quite complicated and far from resolved. Here we can not handle this problem by the end and therefore we are limited to only a few examples. We consider the basic information related to the subject of work; accompanying - with the nature of labor, with technology. For example, a number of professions deal with the use, transmission and transformation of electrical energy, with electric circuits, machines and devices. At the same time, the subject of their work is one, and the technology is different. Therefore, we believe that for them the information on electrical engineering and electrical materials is basic, but from radio electronics, control instruments and others - accompanying. The term "accompanying" means that such information is characterized by a smaller degree of generalization, they cover a smaller number of professions than the basic ones.

As J. Gushuley emphasizes, taking into account this principle, we can distinguish a large group of professions, for example, an electrical profile, for which the basic educational material is electro-technical information and electrical materials. These include professions associated with the production and repair of radio equipment, the profession of household service, and others. Similarly, there is a large group of professions for which the basic teaching material is information on materials science and technology of metals and other materials. These professions we relate conditionally to the profile of metalworking. According to the same principle it is possible to allocate agro-biological, chemical-technological, heat engineering and other training profiles [4].

The proposed principle of grouping professions on the basis of the basic educational material is not universal; it has only a certain purpose - to facilitate the solution of the problem of establishing the optimal link between general education and special educational material.

2. *Interpersonal relations, as one of the means of grouping professions.* In doing so, we proceed from the fact that the placement of teaching material in curricula should correspond to the hierarchy of sciences so that the interdisciplinary connections on the didactic basis reflect the connections between different branches of knowledge.

Since the study of technology is based on some sections of the fundamental sciences, and applied curriculum, in turn, is based on technical information, it follows from this that the construction of curricula is necessary, when the relevant sections of general disciplines are first studied, followed by technical data, and then the corresponding sections of the educational material applied. Only such a construction of educational programs will ensure the functioning of effective interdisciplinary connections.

The general methodological positions of grouping of professions on the basis of general technical training of students of vocational schools, the development of unified curricula, definition of the content and structure of educational material on the technique require the definition of methods for forming the general technical skills of future workers of mechanical technologies.

The theoretical analysis of this problem at the didactic and methodological levels shows that the content of general technical training is most consistent with the methods of laboratory-practical work, problem-search tasks, which can be the main means of independent acquisition of knowledge by students. Y. Gushulya offers educational creative tasks for analyzes of technical objects as a general method of teaching students the scientific foundations of modern technology [5]. Such tasks provide a didactic simulation of the main cognitive interactions of a person with a technical object, which are characteristic of general technical orientation.

The evolution of educational and production activities of students of vocational education an important role plays: the content of teaching and production activities and the forms and methods of its implementation. Understanding the problem of formation of a highly skilled worker is impossible without studying and implementing the educational process of innovative technologies for the completion of works. The success of the educational process, the effectiveness of each lesson of industrial training as its constituent structure, largely depends on the master of production training, the level of its preparedness, qualification and pedagogical readiness. The main tasks that the master of production training faces is:

- optimization of training lessons in training workshops;
- application of innovative teaching methods;
- introduction of innovative production technologies into the educational process.

At the lessons of production training, most innovative technologies are used. These are lessons-games, lessons-excursions, creative labs of masters, master classes, round tables, students work on design techniques for conducting research. Competition in the modern labor market requires from the worker not only deep theoretical knowledge, practical skills, but also

rapid modernization, creativity, and constant updating of own experience in the manufacturing sector. That is why the masters of production training need to constantly study new technologies, develop their own thinking, improve skills in order to encourage students to actively engage in productive activities - not as the performers of the tasks, but as creative individuals capable of active search and implementation of innovative production technologies. The output of the implementation of innovations in the educational-industrial sphere is seen by graduating the highly skilled, competitive workers. Using innovative teaching technologies, the masters of vocational training have made sure that the latest educational technologies involve not just the acquisition of knowledge, but the creative attitude towards them, contribute to the formation and education of an educated, creative, professionally skilled worker. At the lessons of vocational training it is detailed the theoretical knowledge about the operation of equipment, mechanisms, properties of materials, products, etc. At the same time, the best result is achieved when the content reflects the connection with general education and special disciplines. This ensures a purposeful study of the disciplines that represent the foundation of successful occupation.

Conclusions. The grouping of labor professions on the basis of the general technical training of future workers allows the transition from strict regulation of the organization of the educational process in the vocational school to the development of unified curricula. Prospects for further work are the study of organizational and pedagogical conditions of the formation of technical orientation of future workers of mechanical technologies.

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