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THE ROLE OF THE DISCIPLINE METHODOLOGY OF PROFESSIONAL TRAINING IN THE FUNDAMENTAL TRAINING OF ENGINEERING SPECIALISTS

Annotation: The article analyzes the use of the laws of hydraulics, hydraulic systems and devices in modern technology. The features of the development of modern technology are noted, which put forward new requirements for the volume, content and structure of the training of engineering specialists, the need for a fundamental study of hydraulics in the training of engineering specialists in a technical university is substantiated, and the didactic conditions for studying vocational training are identified and justified.

Keywords: research, disciplines, microprocessor, correction, systematization, pedagogical experiment, technology development.

Introduction. The improvement of technology in modern conditions is a necessity, the creation of new models requires the use of the most modern achievements of science, technology and technology. Sometimes the needs for certain types of equipment, for example, professional equipment, even dictate the directions of development of certain fields of science and technology, since in an unstable world, the improvement of agricultural machinery is an objective necessity, since outdated equipment in the case of serious agricultural conflicts is a guarantee of defeat [5].

In the development of modern technology , the following patterns can be noted:

• scientific research leading to a rapid increase in the volume and depth of knowledge in various fields of natural, technical, economic and other sciences;

• the emergence of new promising scientific directions at the junction of various sciences that require specialists with deep fundamental training for their development;

• rapid introduction of scientific and technical achievements into production, which entails the rapid development of efficient knowledge-intensive industries;

• moral aging and rapid generational change of technology, including professional education, due to the high rate of obtaining new scientific knowledge and competition of manufacturers;

• widespread introduction of computers and microprocessors in modern technology, science and manufacturing.

The effective use of any equipment, including hydraulic, requires at least three factors:

- the ability to develop new, more advanced models of equipment, which requires scientific and engineering personnel with appropriate training;
- the ability to produce samples of this technique, which requires a properly equipped industry and trained production personnel;
- competent operation of the equipment used, which requires an appropriate base of maintenance and repair of this equipment and, most importantly, the availability of qualified specialists who ensure the process of its operation.

The noted features: the development of modern technology puts forward new requirements for the volume, content and structure of training of engineering specialists[5]. A special role in the training of modern specialists is played by the fundamentalization of knowledge as the main means of providing deep, versatile, scientifically based knowledge, which is the solid foundation of all special training. It is fundamentalization that makes it

possible to train specialists who are able to most successfully perform their professional duties in modern conditions of rapid development of technology.

Material and methodology of research.Determining the optimal variant of the volume of the studied material of each of the fundamental disciplines, it is necessary to take into account the current trend of reducing classroom hours for studying, unfortunately, it is fundamental disciplines. Therefore, we can only talk about a qualitatively new level of teaching, with the help of which it is possible to create such mutually agreed courses (modules) for each fundamental discipline that allow us to systematize knowledge.

One of such sciences is vocational training. Professional training as a science of fluid statics and dynamics can be studied with varying degrees of description of the processes taking place — from deep fundamental research using a complex and special mathematical apparatus that takes into account the maximum possible number of factors affecting the state and behavior of the fluid, to a primitive presentation of the principle of operation of hydraulic devices and the main effects used.

Given the limited amount of study time allocated to the study of vocational training, there is a difficult problem of determining the rational ratio of the study of its fundamental and applied aspects. In this situation, the most correct thing would be to correct the educational process of training specialists in the direction of the fundamentalization of education. The quality of training of specialists is largely determined by the effectiveness of the organization of the educational process, which should correspond to the change as external. factors (scientific and technological progress, level of economic development,

Agricultural political situation), and internal (features of the organization of the educational process in a particular university, educational and material base, the composition of teachers and trainees).

For the qualified development, maintenance and application of sophisticated modern technology, it is necessary to change the content and structure of knowledge and skills, as well as the possessions of specialists, which should be reflected in the organization of a deeper study of technical issues in the training of such specialists.

The fundamental issue of the organization of the educational process in any university is the choice between two extreme directions: a deep study of the theory or a careful consideration of the design and operation of specific devices and a reasonable combination of these approaches. Since hydraulic machines, hydraulic devices, hydraulic systems and hydraulic drives, as well as systems with pumping fluid supply are very widely introduced in modern transport and agricultural machinery, a vocational training course has been introduced in all technical universities among general professional or special educational disciplines, after studying which students should acquire the knowledge and skills necessary for development, maintenance and the use of technology [4], in which these machines, devices and technologies are used [2].

It is such knowledge that forms a solid foundation for the successful development of any applied issues in the study of special disciplines, the development of real technology and its effective use.

Vocational training as an academic discipline, on the one hand, accumulates the main achievements of science and technology, and on the other hand, it should prepare new generations of researchers and developers who will ensure the further development of the relevant branches of science and technology. This difficult task, characteristic of many branches of science, can be solved only through the rational organization of the educational process [6].

To solve the tasks , the following research methods were used:

- analysis of educational program documentation;
- didactic design and pedagogical experiment;

- testing and questionnaires;
- conversation;
- analysis of the results of independent, control and calculation and graphic works, the results of exams and tests.

Results. Methods of mathematical statistics were used to process the experimental results [5]. As a result of the conducted research, the didactic conditions for the formation of knowledge and skills in the field of hydraulics of an engineering university are determined and justified: the preparation of an engineering specialist for professional maintenance, use and development of hydraulic devices and systems used in modern and promising technology can be more effective when implementing the following didactic conditions:

• the structure and content of the knowledge, skills, skills being formed are determined by the target orientation, content and nature

of the professional activity of an engineering specialist; the logic of the process of studying hydraulics, its stages, forms and methods are determined by the peculiarities of the structure, content, scope of application of the scientific knowledge of an engineering specialist in the course of his professional activity;

• the process of formation of knowledge, skills, skills is based on subjective relationships using active forms of organization, methods and means of training, such as computer equipment (electronic slides, etc.), working layouts and real samples of equipment;

• features of the process of formation of knowledge, skills, and abilities are determined by the specifics and possibilities of training an engineering specialist in a modern university.

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