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METHODS FOR THE IMPLEMENTATION OF THE SELECTION OF EDUCATIONAL MATERIAL FOR SPECIALTIES IN THE TEACHING OF HYDRAULICS

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Annotation
This article analyzes the methods of implementing the selection of educational material for specialties in the teaching of hydraulics. Also, on the basis of analyzes, state educational standards for technical specialties are determined the goals and objectives of teaching the hydraulics course, taking into account the qualification requirements. This makes it possible to determine the next stage in the design of the course of study - the composition and structure of the academic discipline, and to proceed to the composition of the curriculum.

Keyword: teaching hydraulics, specializations, methods of selection of educational material, design of a hydraulics training course, principles of stability and dynamism, model, etc.

Introduction

During the period of study in a higher educational institution, the volume of knowledge that a student can acquire is naturally completely limited and even more relative: the current state of Science and society, dynamic scientific and technical and social progress, an increase in the volume of new information on exponential law sharply reduces the share of knowledge received by a student during

Under these circumstances, the task of conveying to the student at the educational level the amount of information sufficient for his future professional activities will be nonealous. In particular, the task of intellectual development, which includes the student's ability to master knowledge, independently search and assimilate new information, comes to the first plan.

At the present stage of the development of society, the main task of Higher Technical Education is to direct the methodological system of teaching to the

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priority of the developmental function of education in relation to its educational, informational functions, to direct attention from increasing the volume of information intended for absorption by students to the formation of skills for using information in the most general sense,

Analysis of Literature on the Topic

Scientists: A. N. Kolmogorov (the theory of turbulence), I. I. Kukolevsky (the theory of mechanical engineering hydraulics), S. A. Khristianovich (undefined movement of liquid) made a great contribution to the development of hydraulics. Research by I.I. Agroskin, T.M. Bashti, M.A. Velikanov, Y.A. Zamarin, I.I. Levi, A.N. Rakhmanov, S.S. Rudnev, F.I. Pikalov, M.D. Chertousov, R.R. Chugayev, A.A. Uginchus and many other famous scientists not only in our country, but also abroad made a significant contribution to the development of theory and practical calculations [1].

Research Methodology

The formation of the content of vocational education in any subject is based on the scientific foundations determined by the general goals of higher technical education and the specific features of the organization of the educational process in engineering specialties.

We follow the basic principles discussed in the first chapter when designing a hydraulics training course.

The most important of these principles in the development of the "Hydraulics" curriculum may be:

1) the principle of scientificity; the principle of systematicity and consistency; principle of existence; the principle of connection between theory and practice; the principle of stability and dynamism.

Taking into account the importance of the fundamentalization of higher education in today's conditions, the principle of scientificity is of particular importance both in the development of a holistic educational process and in the design of each academic subject.

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Analysis and Results

In the development of the curriculum of the hydraulics course, the implementation of the principle of scientificity consists in the following: the curriculum should not only serve as a basis for the study of the practical aspects of this science, but also for the study of other sciences contains a sufficiently rigorous statement to be applicable and to provide opportunities for self-study; any practical problem is considered as a special case of using a certain hydraulic phenomenon with full understanding of its essence.

This principle is to refrain from using the most attractive and modern theories in the curriculum until they have been scientifically confirmed. requires.

The principle of existence is based on the "Thesaurus" law: for a person only what corresponds to his thesaurus, that is, the volume of accumulated knowledge, skills, ways of thinking, is available.

Practical application of the principle of existence Ya. It was formed by A. Comensky: from easy to difficult, from known to unknown, from simple to complex.

It forms the opposition between the challenges, tasks and the necessary level of preparation of students, their intellectual, emotional and volitional development, which is the driving force of education. "The task is difficult, but it should be possible. It is necessary for the learner to create a mental tension, an opportunity to find a solution through emotional and intellectual actions [1].

The task must be difficult, but possible, within the "range" of one's knowledge.

Compliance with the principle of availability has a significant impact on the location of the content of the curriculum of a particular subject in the general curriculum of the specialty under consideration, that is, depending on the semester number. In the early placement of science in the curriculum, the content of the curriculum should be simplified according to the accumulated thesaurus of students. This reduces the possibility of effective training in a particular subject. In such a situation, attempts to increase the level of preparation by making the content more complex will lead to a worse result due to the violation of the availability principle.

This situation emphasizes the main importance of rationally organizing the curriculum, both in terms of organizing the sequence of learning a subject, and in terms of the size and content of each subject. Based on the qualification

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requirements of the State Education Standard in terms of qualification characteristics, the normative content of compulsory subjects and the experience of training specialists, the curriculum should take into account interdisciplinary relations as effectively as possible.

It is necessary to use the principle of systematicity and consistency for educational subjects, which are based on a sufficiently wide range of basic subjects and are the basis or an important part of the subsequent subjects specific to the hydraulics course.

The principle of systematicity and consistency implies the acquisition of knowledge and the formation of skills in the form of an integrated system, each new knowledge is based on the previous one and consists in planning the content of science that develops upwards [2]. The main role in the application of this principle is played by the identification and consideration of interdisciplinary relations.

The principle of linking theory with practice in training specialists to work in a specific technical field is so clear that it does not require explanations.

It is of great importance to apply the principle of stability and dynamism in the design of educational programs for subjects related to rapidly developing fields of science and technology, such as hydraulics.

In this principle, the system of general and special knowledge, skills and abilities is stable, i.e. unchangeable, and dynamic, i.e. including changing parts, they change over time and some of the professional activities is distinguished by its role in the formation of aspects.

The theoretical foundations of a special subject are the most stable part of professional training. It serves as a basis for the development of creative abilities in the conditions of rapidly developing production. Fundamental, stable knowledge and skills that accelerate his adaptation remain the most reliable and necessary condition for forming a highly qualified specialist and ensuring his professional mobility [3].

When applied to the hydraulics curriculum, the theoretical part of the science is of particular importance as a solid foundation for the study of all concrete applications and all hydraulic devices and systems.

According to the data of psychological sciences, the intellectual development of students occurs only in the process of active purposeful activity, which consists

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of obtaining information and processing it to achieve certain results, in particular, to obtain new information. Thus, certain knowledge, from the point of view of information, is maximized by the needs of society as a whole and minimized by the capabilities of students, their interests and inclinations that do not correspond to science, and is primarily intended to process the information entered into it. represents the database [4].

The creation of such a database or content in the process of teaching methods of educational activity, together with the methodological mechanism of organizing the processing of this information, is the central problem of the methodological system of teaching in each academic subject, including hydraulics.

The idea of the priority of the developing function of teaching hydraulics is essentially a form of humanization of engineering education, its orientation towards the formation of a student as an intellectual person. The humanitarian direction of teaching hydraulics, the humanitarian potential of this subject and the use of the relevant opportunities of the hydraulics teaching process, reconsider the goals and tasks of teaching hydraulics in a higher educational institution, first of all, the relative value of each specific person in technical education. 'results in the need for review. Naturally, the use of humanitarian potential, which is possible only on the basis of studying a certain educational material, requires a deep and scientifically based reassessment of the role of specific components of hydraulic science in the modern technical education system.

The entire system of teaching hydraulics, like other disciplines, should be built as a system for solving the dialectical conflict between a certain individual and society as a whole. Everyone recognizes that the relationship between these two subjects of the process of civilizational development, in which everyone pursues their own interests, is a necessary condition for the democratization of the education system in modern and future society, that is, their obligations to each other are interdependent. based on receiving A dynamic solution to this conflict requires the establishment of a harmonious combination of goals set by a particular person and society as a whole.

From the point of view of society, the educational system of technical specialties should ensure the expanded production of human resources capable of implementing scientific and technical progress at a modern and prospective level

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in all areas of application of the entire spectrum of technical knowledge. In this way, the task of complete special engineering training is imposed not on a specific person, but on every generation as a whole.

The goal of a certain person, in essence, is to occupy a position in the society that allows to reveal his creative potential to the maximum extent and at the same time provides an adequate assessment of his contribution to the development of the society, a proper respect for his person as an independent value by the society.

Using all the opportunities provided by the higher education system, students with a well-formed hierarchy of values undertake to serve society through the knowledge they have acquired during their studies. This obligation is to become the most complete member of society in the field of professional, labor, and social activities during the educational process.

The humanization of special technical training shows that, in order to achieve its goals, society undertakes to provide everyone with all the opportunities to receive education that is as close as possible to his personal interests and inclinations, abilities and capabilities [5].

The practical goals of technical education include: creating models of real events, studying events according to given models, creating applications of models; join the experience of creative activity; get acquainted with the role of hydraulics in scientific and technical development and modern production.

The fact that the methods and methods used in practice are different makes pedagogues interested in the learning activity itself, which is an important and necessary condition to increase motivation in training sessions. The variety of methods and methods allows the pedagogue to choose the most convenient method for solving a specific didactic problem at a certain stage of training (acquainting with the educational material, strengthening knowledge, etc.).

Conclusions and Suggestions

It will be possible to apply the principle of information capacity to a very limited material as a realization of the humanitarian potential of hydraulic education. Therefore, this principle, especially taking into account the universality of the task set in it, has mainly a minimizing character [6].

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Thus, the combination of the principles of information capacity and social efficiency in the methodological system of teaching hydraulics has the characteristic of bright optimization.

All the principles that are the basis for the selection and creation of the above-mentioned educational materials are closely related to each other. Their generality applies one of the most relevant approaches to the organization of the educational process in modern conditions - the principle of fundamentalization of education.

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