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**SPECIFIC ASPECTS OF THE FORMATION OF PRACTICAL  
 KNOWLEDGE IN THE TEACHING OF THE COURSE OF TECHNICAL  
 MECHANICS**

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**ABSTRACT**

*In the article, the directions of preparation of Future Machine-Building bachelors in higher educational institutions for the profession on the basis of technical mechanics are considered. After the author's graduation, the problems of professional training of machine-building bachelors were analyzed..*

**KEYWORDS:** *Technical Mechanics, Professional Training, Engineering Activities, Mechanical Engineering.*

**INTRODUCTION**

The research carried out and the fact of Life shows that in the process of using modern equipment and equipment brought about by heavy and light industrial enterprises with the aim of increasing the work productivity, a number of problems arise. As a reason, it can be seen that in the absence of mutual integration of education and production sectors.

In recent years, several resolutions have been adopted by the president to link the integration between education and production. The work carried out to carry out the issued decisions indicates that for all mechanical specialties it is considered a universal science. The science of technical mechanics is the science of the alphabet of engineering specialists.

**Purpose**

In the science of technical mechanics –theoretical mechanics, resistance of materials, theory of machines mexanizm, theoretical knowledge of machine details, as well as the study of complex issues that determine the external and working forces formed in the materials, the forces generated in the machine and mexanizm structures, the details of machines and mexanizm, the

Basic Rules for the methods of calculating their types and functions. The science of technical mechanics is included in the block of general professional Sciences, as a general scientific science that gives the basis of Special Educational Sciences of general professional education, which provides the basis of knowledge. In science, machines and circuits are studied by linking the calculation of details and structures with scientific and experimental methods. The science of technical mechanics is based on the acquired knowledge. Therefore, its most important task is the formation of practical knowledge in students.

A number of researchers and Methodists-educators concluded that the main goal of teaching the course "technical mechanics" is to study "theoretical mechanics", "construction of buildings and structures with static elements", "theory of machines and circuits", "fundamentals of machine details and design" and similar special disciplines in a cross – examination. It is based on a number of fundamental disciplines to deep master the science of technical mechanics, complete the solution of theoretical and practical issues; chunanchi is believed to be the maximum "link" to higher mathematics, physics, informatics, engineering computer graphics, Materials Science and other sciences [7, 12-14-b.]. It provides a basic understanding of the methods of solving a large number of issues related to the work of various construction structures and their calculation, the Design Calculation of machine details, the study of mechanical movements of material bodies and mechanical interactions.

### **Scientific novelty of the article**

Practical knowledge is considered as a means of opening up the scientific method, thereby providing students with the motivation to acquire knowledge and prepare them for the fulfillment of the purpose and constructive activity in the surrounding world [1].

It was noted that the exact picture of the scientific method of cognition, which determines the tasks of formation of practical knowledge in relation to the course of "technical mechanics", which will be conducted on the basis of Higher Education, will allow students to acquire the necessary knowledge, skills and skills, will appear on the basis of exactly substantive materials [9].

Analyzing the definitions and opinions of various authors on the formation of practical knowledge, taking into account the fact that it is aimed at preparing students of a higher educational institution for professional-practical activities, we have based the following definition: practical knowledge is knowledge that allows applying theory in solving practical problems [9].

When we say practical tasks-we understand the calculation and graphics, laboratory work, various test tasks in a practical description, etc.

The basis of the formation of practical knowledge among students of technical specialties is the rules of an active approach to education.

The science of "technical mechanics" is a "productive" educational environment that allows the formation of practical knowledge among students of technical specialties. For this reason, it is necessary that the teaching of technical mechanics is closely related to special subjects with a focus on practice.

Thus, the formation of practical knowledge in the course of "technical mechanics" in students of technical specialties is an important factor in further ensuring the effectiveness of teaching them special subjects.

In this regard, the students are:

- \* change (deformation) or immutability of machine and construction parts in shape and dimensions under the influence of external forces;
- \* gear, chain and belt transmission;
- new directions in the design of modern machines;
- to determine the dimensions of materials through machine details and knots, compounds, roller bearings, moulds;
- \* calculation of strength of machines and structures and their parts;
- to have an idea of the mechanical properties of stretching and compression materials;
- using modern design tool for machine details and specifications;

must have relevant skills. This is a list of the basic knowledge obtained from the course "technical mechanics", which is necessary for students in the process of obtaining technical specialties.

The results of our research confidently show that the formation of practical knowledge among students of technical specialties is necessary step by step, that is, at the beginning of the process of teaching students-a special course "mechanics", and then – when directly studying the course "technical mechanics", further development of this process is necessary.

The need to introduce a special course "mechanics" depends on the following circumstances::

- \* lack of preparation of students in mechanical and general technical sciences;
- inadequate student's ability to work independently;
- \* high requirements imposed by the state educational standards for the preparation of graduates of technical specialties for the profession [10].

In fact, The conducted experience-test results show that in the performance of tasks with a practical description in technical mechanics, students make mistakes, encounter a number of difficulties associated with the formal assimilation of certain technical terms, physical sizes, formulas, the inability to apply theoretical knowledge in practice, that is, during the study of technical mechanics, practical knowledge among students of technical specialties

Thus, practical issues of technical mechanics are an important factor in the professional orientation of education in the training of future specialists in technical mechanics.

Thus, it was necessary to establish the task of the course "technical mechanics" as the formation of practical knowledge of students. It is important that such a goal is set and constitutes the subject of our research.

Using the solution of the problem of understanding in the proposed education, we distinguish the following stages of the management of the educational process for its basic unit::

- event recording;
- create high quality model;
- to determine the means of quantitative characterization of the phenomenon;
- characteristic of the result of the study of the phenomenon.

**Results and practical applications.** Thus, according to our research conducted, a student with practical knowledge should be able to::

- to identify the different types of structures that are seen in the technical processes, to distinguish the exact dimensions that occur through these structures;
- distinguish the main ones that are important from the insignificant details that are distracting in the object or phenomenon, that is, drawing up a model, it can be not only one of the main models of the type of "material point", but also any model that is suitable for the given task;
- to distinguish objects and phenomena from their descriptive means, to find the descriptive means corresponding to the selected model, to bring a private description, if necessary;
- to predict the course of a particular event with other objects, under the conditions of other events, using the knowledge of the descriptive characteristics of the phenomenon under study.

Must be understood:

- state and meaning of descriptive instruments;
- to logically describe an ongoing event or process and to understand its causes and characteristics.

Must be mastered:

- \* general rules of theories and laws, areas of their application;
- basic physical quantities;
- limits to the validity of concepts.

Thus, an important educational task is the formation of knowledge about modern practical knowledge, modern technology and technical principles of production in students. At the beginning of the study, objects with different characteristics and phenomena with different aspects are selected. The most important function of mechanics is to explain the phenomena of nature, that is, to find the answer to the question "why this phenomenon happened exactly so, and not otherwise (for example, why when the bodies are compressed, an attempt voltage occurs, why the normal voltage is zero, etc.)". But before explaining the phenomenon, it is necessary to discover it, to distinguish it from a number of other different processes occurring in nature, to understand the scientific truth [2,3, 6, 8, 12, 13].

One of the first stages of scientific knowledge is the identification of these facts, in the process of which "what happens when the bodies are compressed or stretched, and how does it happen?the question " "quot; is answered. At this critical stage, the student will be able to independently distinguish the phenomenon that is happening and "why...?the answer to the question " "quot; will have to give a justification. Specialists are required to have sufficient preparation and

qualifications for the creation of modern machines and equipment, to identify them with theoretical, practical and experimental yuli.

The second stage is modeling. When we say directly about modeling, this logical step can not be overlooked. In order to formulate knowledge in the process of cognition, students must always be able to identify important characteristics in a particular case of the study of the phenomenon and not pay attention to a number of other, insignificant, insignificant, secondary characteristics. The main features and the ability to determine the abstract of the rest are important in the formulation of models and the determination of the forms of the appearance of related phenomena, the establishment of laws.

Modeling is a necessary stage of the process of scientific knowledge as the process of creating the ideal model of objects and phenomena for their study and explanation.

For example, for the logic of introducing a new value corresponding to logical thinking chains, it is necessary to carry out the following steps [11, 32-b.]:

- \* ultimately tracking the interactions of things and events;
- finding a new feature in a single thing or event;
- to determine the same characteristic of a particular group of objects or phenomena in others;
- naming this feature;
- to determine the different degree of manifestation of this feature in different things or phenomena;
- \* conclusion on the need to introduce a new character;
- add new character name.

The fourth stage is a feature of the results of the study of this phenomenon, and the second stage is an inalienable link with the construction of the model. Therefore, we can observe that this logical step is not sufficiently illuminated in the course of mechanics.

## CONCLUSIONS AND SUGGESTIONS

Based on the above considerations, we can conclude that the formation of practical knowledge in technical mechanics and the problem of the universal block of Sciences (technical mechanics) is not sufficiently complete solution. Thus, our research work showed that in order to increase the effectiveness of teaching technical mechanics to students of technical specialties, it is necessary to develop a special course program, a work program on technical mechanics, purposefully formulate practical knowledge of these programs in students, introduce them in.

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