

Psychological and pedagogical aspects of the formation of practical knowledge in the study of the course "Technical Mechanics"

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Abstract. In the field of professional motivation, a positive attitude of the student to the chosen profession plays a crucial role, since this is due to the final goals of education. A positive attitude to the profession determines the formation of other private motivations in harmony with sufficient knowledge of this profession

Keywords: technical, mechanics, practical, knowledge, psychological, aspect, motivation, activity.

Introduction

The formation of practical knowledge is based on the development of logical thinking. The most important methods of cognition, in particular in physics, are abstract, comparative, modeling, hypothetical, mental experience, as well as the study of practical problems of physics.

An important factor in cognition is the coordination of scientific and educational knowledge. If the process of harmonization of scientific and educational knowledge is not carried out, education ceases to be perceived as an object of the world through its scientific description. The content of the subject of education should reflect the system of knowledge corresponding to science. Learning is the assimilation of cognitive models. The cognitive activity of a teacher is built as a scientific cognitive activity, the main feature of which is theoretical thinking, where the relationship between a person and the world is reflected as an object-subject relationship.

According to Piaget, formal logic is formed as the highest stage of the development of the intellect by the time of early adulthood. That is, the system of actions developed in the early postgraduate period prepares the ground for the formation of scientific concepts, and in the last, highest period of intellectual development - during official actions, the reader gets rid of a clear connection with the object and acquires the ability to think like an adult [5].

He treats decisions as a hypothesis with any consequences; his thinking becomes hypothetical-deductive. "At the fourth stage of operational development, the ability to think in terms of new signs - hypotheses" [5, 603-b.] is observed. Consequently, the development of service thinking is associated not only with the level of knowledge of a person, but also with his life experience, motives and interests.

Taking into account the psychological and pedagogical aspects of the formation of practical knowledge of students, the formation of practical knowledge among students includes the following:

- cognitive interest of students, at the same time, develops their thinking.;
- encourage students to study the subject, motivating them for successful learning activities;
- shows its influence on individual characteristics, which lead to a change in the desires and interests of the student, as well as professional orientation.

In this regard, interest is defined as a specific cognitive orientation to the subject and phenomena of human reality. Cognitive interest is the result of the formation of knowledge and skills in the educational process. Cognitive interest that arises under the influence of the factors of the educational process is associated with the desire to deepen one's knowledge, it can have a variety of content, solidity, focus, stability [4; 10-11].

According to the general psychological definition, cognitive interest is the emotional experience of this cognitive need, one of the sources and components of learning motivation. Interest itself is a complex other phenomenon. Interest is defined as "as a result, one of the integral manifestations of complex processes in the field of motivation", and it is important to distinguish

between types of interest and attitudes towards learning. Interest is "... wide, planned, effective, professionally significant, educational and cognitive and the highest level - that is, it can be of variable interest" [6, 23-b.]. When knowledge and skills developed during the learning process are added to this, this can become the highest level of cognitive interest.

However, there is such a dependence that it is impossible to solve them without changing the approach to teaching mechanics, without forming students' ideas about the method of scientific research and studying the practical aspects of mechanics.

This means that the desire of the student to study the course of mechanics in depth arose under the influence of inefficient methods of its development in the process of reading materials from electronic textbooks, newspapers, magazines, books, conversations with specialists, as well as in the process of learning the existing knowledge and mechanics. The process of learning mechanics is associated with an increase in the content and volume of scientific knowledge and their abstractness, which deepens the existing dependence. Since the teacher does not have the necessary skills to independently complete the assigned tasks, students lose interest in the subject, as a result of which the interest that has arisen remains episodic.

It should be noted that there is a steady cognitive interest of students in another aspect and it is impossible to maintain and develop it in the educational process in the classroom and in extracurricular activities.

There are various methods for solving these dependencies. Here are some of the things you can do while learning:

- individual, education-oriented approach to education, differentiated education;
- the use of forms of active participation of students in the educational process (didactic games, conversations, discussions);
- optional and specialized courses;
- to acquaint students with the methods of scientific research, the practical application of the studied material [2].

Without reducing the importance of one of these areas, let us dwell on the influencing factor of the other, that is, the influencing factor of practical knowledge.

• A situation where practical knowledge is not clearly formed when students study a basic physics course. One of the methods for solving this problem is the introduction of a special course in mechanics into the educational process for the following reasons, namely:

- • there is an opportunity to "not leave" the main line;
- • The content and structure of a special course can be both very flexible and changeable.;
- • the form of organization of training on a special course will be freer and will require a creative approach from students.

Then the main task of this special course will be the formation of practical knowledge among students.

The most effective influencing factor, as noted above, is the modeling of scientific knowledge, the development of active methods, such as the application of the model on a computer, including the creation of multimedia forms for applying the model on a computer, as well as research experience. At the same time, stimulation of new clicks finds its expression as one of the most important criteria for the formation of cognitive interests [9, 53-b]. It should also be noted that the activation of students' interest in knowledge is manifested in the demonstration of modern scientific achievements, new scientific directions emerging in the adjacent network of several disciplines.

Thus, based on the above circumstances, the creation and maintenance of cognitive interest is one of the determining factors in the formation of practical knowledge among students. It should also be borne in mind that cognitive interest is an important component of learning motivation, in particular the study of mechanics in our research work.

The motivational sphere is the "core of the personality", which determines its orientation and core values [3]. In the educational process, the impact on the motivational sphere can be realized through the content and teaching methods. The formation of knowledge and skills that affect the area of motivation in the chosen direction of students can be one of the methods of influence.

To characterize the characteristics of a person, it will be necessary to answer questions about the characteristics of a person, his needs, interests, views and ideals. Therefore, in order to study the area of students' motivation in connection with the formation of their practical knowledge, it is necessary to conduct an experimental study and answer such questions [8].

The analysis shows that during this period, the obvious development in relation to age refers to the personal sphere, which is the beginning of the implementation of life plans [7,9].

It is known that the success of activities in the educational process depends on many factors - psychological and pedagogical description.

Historically, when we talk about the activities of the educational process and its success, it is primarily understood that the bond is the influence of the intellectual level of the individual. Of course, the importance of this factor cannot be underestimated. At the same time, some experimental studies again force us to return to the problem of the correlation between motivational and intellectual factors. Thus, in one of the studies that tested a group of students on a scale of general intelligence [6], scientists came to the conclusion that there is no significant correlation between indicators of intelligence and appropriation, neither in special subjects, nor in the humanities block. As it turned out, "strong" and "weak" students differ from each other not by the level of intelligence, but by the motivation to work in the educational process. Strong students are distinguished by intrinsic motivation: they feel the need to master a profession at a high level, they are aimed at acquiring solid professional knowledge and practical skills. When it comes to weak students, their motives are mostly external, that is, they depend on the situation: they avoid accusations and punishments for poor reading, try not to lose their scholarship, etc. [7].

The data obtained in some studies on the psychology of education can play the role of a compensatory factor in the event that high positive motivation does not provide adequately high specific skills or the necessary knowledge and skills. No higher level of ability can replace low or no motivation to learn, which can lead to a higher level of mastery in learning activities. Thus, when studying the technical creativity of students, it was experimentally established that a high positive motivation for this activity can replace an inadequate level of special abilities [160]. Interested students begin to create models that are much more specific than their peers, who have a high level of specialized skills but have low motivation for this activity. Thus, both the activity of students in the educational process and the indicator of their assimilation largely depend on the strength of motivation [7].

In conclusion, the impact of different strategies, technologies, teaching methods on the attitude to the profession; teacher influence on the group. Clearly, the creation of a target area that is related to the ultimate goals of education and is designed to inform students about the inclusion of all the subjects studied in the structure of vocational training is the most important way to increase the effectiveness of education. is an important factor. It is necessary to form the educational process and the personality of the specialist.

The analysis of psychological and pedagogical literature confirmed that abstract-logical thinking developed by second-year students allows the formation of practical knowledge. Practical knowledge is a factor that has a positive effect on students' cognitive motivation and helps to further form a positive professional motivation in relation to the specialty they have acquired. One of the effective ways to form practical knowledge in technical specialization students is to create a special course. On this basis, it is planned to integrate the teaching of technical sciences.

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