

## PSYCHOLOGICAL CHARACTERISTICS OF THE PROCESS OF TEACHING PHYSICAL SCIENCE

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### ANNOTATION

This article aims to provide methodological assistance to students in teaching and learning physics in secondary schools based on a psychological approach and science based on the laws of nature.

**Keywords:** Modern physics, computer technology, mental activity, physics extremum, science, technology

The emergence of the methodology of teaching physics is directly related to teaching physics in various schools. Issues such as the content and composition of the physics course, issues of professional education, techniques and methodology of the school physics experiment, the formation of physical concepts in students were further improved and developed. In order to increase the efficiency of the physics teaching process, teaching methods and techniques were improved, the use of technical means of teaching and electronic-computer technologies was widely established. The content of the physics course is regularly improved on the basis of achievements in science and technology.

- The scientific level of physical education was enriched by the latest achievements of physical science. These works are carried out in the following areas:

- interpretation of educational material from the point of view of modern physics;
- inclusion in the school physics course some fundamental experiments and the scientific foundations of modern physics. These cases were reflected in all physics textbooks.

The imposition of the issue of the further development of physical education in secondary and higher schools due to the development of society is an objective and legal process. It is determined by scientific and technical revolution and achievements of pedagogical science. In particular, the content of physical education is determined by its modern nature, to what extent it reflects the achievements of physical science. An example of this is the partial introduction of "great ideas" such as probability, the interweaving of particles and corpuscular-wave dualism, and it can be shown that scientific research is still being carried out on these issues today. In carrying out research of pedagogical, methodological and professional aspects of the interdisciplinary connection of the physics course.

Individual mental characteristics – attention, good or unpleasant mood, volitional activity, as well as interest and enthusiasm that manifest themselves in the attitude of students to training are important factors that follow in the process of studying physics. The variety of affective states that students experience in the educational process plays a big role in emotions. This also affects the strength and stability of attention.

As you know, in order to achieve any goal, it is necessary to give mental strength, show volitional activity, spend strength. In the process of education, the activity of mental activity is ensured, mainly with the help of willpower. The accuracy of the goal observed from the effort

and effort spent in the educational process, the clarity of the means to achieve it, increased activity in students, a full and deep perception of learning material also intensifies the desire to realize. Interest is manifested in a constant desire of a person for what he is interested in, in his desire to explore it, in his own way. It is also necessary to dwell on the factors associated with the pedagogical activity of the teacher. How much a teacher acquires a subject, the style of its teaching, the skills of organizing and conducting a lesson, the individual qualities of a teacher in general, characteristic of a teacher of a subject, are included in the sentence of factors that are valid in the formation of knowledge in students.

Along with the organization of the process of teaching physics, it is necessary to take into account the specific mental peculiarities of teaching physics. They are determined first of all by the content of science. Penetration into the essence of the studied objects requires students to perform abstraction, build ideal models, move from one-view abstraction to its invasion, and other similar fantastic actions (operations). All this expresses physical scientific thinking, all fantastic operations are formed in the process of reading and develop with increasing age.

The second characteristic feature of the physics teaching process is the following: in physics teaching, more models and signs of different manifestations (formula, signs of the elements of the electrical circuit,...) are used, and students are required to carry out the transition from the perception of sign images to real objects, and vice versa, from the perception of inverse – real objects to.

The third feature of the physics teaching process itself is the use of showing experiments, the organization of students' observations, their high emotionality associated with the independent performance of practical work. According to age, training by classes in accordance with mental characteristics is considered as follows.

It should be noted that children in grades 6-7 have a low level of abstract thinking. In them, instructive figurative thinking has an advantage, therefore it is advisable to teach physical phenomena based on experience and exhibitions.

At the same time, it is necessary to educate students on the formation of skills to distinguish common signs of events. They should be gradually taught to draw conclusions with the technique of deduction as early as the 6th grade.

In the upper classes, academic lyceums and colleges, the process of forming in students such concepts of kinematics, dynamics as “material point”, “speed”, “power”, which are characterized by a high degree of abstraction, will be much easier.

With the technique of deduction for the development of theoretical thinking, the emphasis on inference is strengthened. Here, elements of the molecular –kinetic theory of the structure of matter, electron theory are studied, on the basis of which the physical properties of substances in different aggregate states are explained, and electron phenomena occurring in different environments are studied. A good theory is not only a means of understanding phenomena, but also a means of restoring them later in memory. The skills formed are developed to a sufficiently high stage, as a result of which the cognitive abilities of students grow.

Thanks to this, readers will be prepared for the assimilation and restoration of scientific information, which is increasing in size. They will be able to transfer the knowledge gained in physics to another subject.

In the study of physics, the teacher must know the conditions that allow him to educate and develop interest. Creatively working teachers use different techniques in order to develop interest in learning. Of great interest to students is the use of well-prepared demonstration experiments and the organization of independent experimentation, home experiments and observations, the solution of issues indicating the practical application of theoretical knowledge obtained in the lesson. The following can be cited as the main factors in the development of students' interest in knowledge of scientific knowledge and research skills:

- statement of educational material in a scientific and rigorous system;
- to create a problem situation in the lesson and involve students in solving the problem posed;
- execution of tasks of a creative nature by students in the lesson;
- creating conditions for students to tell their classmates what they learned from popular science literature about the issues they are interested in;

To instill a deep and strong interest in science, it is necessary to apply methods that activate students' thinking skills and attention, help to understand the importance of knowledge in the conditions of scientific and technical revolution. Educating students' interest in science helps them solve many technical issues. The main source of awakening students' interest in physics is the teacher's activities in the lesson, his personal quality and the ability to organize cognitive activities of students.

Along with the provision of scientific knowledge to students, it is necessary to arm them with skills and qualifications of a practical nature. To form the skill of performing this or that action, the student himself must first analyze that action and clearly imagine what elements he will find.

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