

THE ROLE OF SUBJECT OF PHYSICS IN THE FORMATION OF STUDENTS' SCIENTIFIC OUTLOOK

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Abstract. *This article highlights the important aspects of physics in the formation of students' scientific outlook. The method of developing scientific thinking is explained with the help of concrete examples. It is explained that laboratory exercises in physics teaching can solve a number of educational issues.*

Keywords: *scientific outlook, fundamental science, natural-scientific knowledge, scientific thinking, creative ability, physical laws, natural phenomena, theory, experiment, measurement.*

The role of science, especially fundamental sciences, is incomparable in the formation of a scientific outlook. Science is a condition of human cultural development. With the help of science, man develops material production, perfects relations in society, educates and educates the new generation of human society, heals his body, and solves environmental problems. The development of natural-scientific knowledge and technology significantly changes the way of life, increases human well-being, and improves people's living conditions. The role of physics, which is especially wide-ranging in its application, is very important here.

In higher education, students are introduced to physical quantities, physical phenomena, laws for the first time, connections between phenomena are determined, and connections between these phenomena are explained in a comprehensible manner. They are introduced to measuring instruments and practical applications of physics. All this develops the observation and thinking of students, expands the range of polytechnic knowledge. It is necessary to continuously strive for self-improvement of the student in the teaching process and achieve positive achievements in this regard [1].

Scientific thinking and creative ability arise on the basis of the conditions of social life and are implemented on the basis of words, concepts, logics, which are considered as products of social practice. Although the source of thinking is intuition, it goes beyond the limits of direct perception of intuition and allows to gain knowledge about such objects, properties, relations of the real world that a person cannot directly perceive.

Social practice is the criterion of the reality of thinking. It also serves as the basis upon which logical rules and laws are formed.

As a method of development of scientific thinking, for example, in the study of the quantum theory of light, in an understandable way to students, based on which scientific facts, scientists first encountered the assumption about the quantum description of energy radiation and absorption, what contradictions arose in this, how they were solved, wave and corpuscular it is necessary to reveal how they came to be the primaries of their properties [2].

Students observe the conflict of ideas, try to determine from their point of view, express their opinion, seek to justify and prove their opinion, fill in their thoughts and come to a theoretical conclusion. This situation can also be applied in practice in problem solving and laboratory exercises. We give examples of creative laboratory works: moving a cart with a certain

acceleration, moving an object in a given path and time, a compressed spring throws an object to a distance, determining air humidity, determining the coefficient of friction of scattering objects. An important advantage of laboratory work like this is that the student is confident that he has reached the right conclusion based on his own experience, not on the answer. In the process of education, the following will help to solve the problem of training creative active individuals with high-level abilities, which is one of the important problems of the present time, with the development of students' creative abilities: acquiring the skill of explaining natural phenomena based on physical laws; solving problems using physical formulas; application of physical laws; know how to use measuring instruments, estimate measurement error; to conduct experiments, to be able to describe and analyze the obtained results in the form of a table, graph, diagram; compliance with technical safety rules when using physical devices.

Creativity is the highest form of human activity and resilience. Creative abilities are the ability to explain the need for innovation, express the problem, use the knowledge needed to advance the hypothesis, theoretical and practical confirmation of the hypothesis, and the ability to create a new original solution as a result of finding a way to solve the problem.

Development of creative abilities consists of positive grounding of teaching and formation of interest in knowledge and abilities, deep, solid knowledge and the ability to apply them to explain phenomena, generalized educational and practical knowledge, skills and abilities, effective development of student independence. The main part of positive abilities is theoretical thinking and cognitive activity. Question-and-answer discussion and problem-based method in explaining a new topic in the lesson is an effective means of developing students' creative abilities. In such conversations, a dispute organized by the teacher arises among students, and different views face each other. In such cases, concepts and laws are brought up by the students themselves in the process of solving educational issues. Creating tension requires a lot of work and skill, but the result justifies the effort.

Physics provides students with theoretical knowledge in various directions of this science, and prepares them to conduct their work activities, adapting to the current conditions of the development of the science.

Carrying out laboratory work provides students with the following theoretical-experimental information: introduces the basics of physical phenomena and their laws, develops skills and qualifications for working with modern physical measuring instruments, introduces methods and methods of processing physical measurement and experimental results. In addition, in close connection with lectures and other forms of physics education, it fulfills the tasks of summarizing, strengthening, developing and ensuring deep mastering of the main states of the theory [3].

For example, it is noteworthy that laboratory exercises from a physics course can solve a number of educational issues:

theoretically and practically introduces students to the dialectics of knowledge (unity of theory and experiment, theory of measurement, calculation of absolute and relative errors, etc.); ensures advance planning of experiments and their successful conduct, develops students' scientific and research skills; summarizes the scientific knowledge of students in all sections of the physics course and brings it into one unified system; maximally individualizes students' activities in the physics laboratory, forms independent work skills; develops creative abilities of students [4].

The provision of theoretical and practical knowledge in teaching physics summarizes students' scientific knowledge, which in turn becomes the basis for the formation of students' scientific worldviews.

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