

## FORMING FUNCTIONAL NATURAL SCIENTIFIC LITERACY IN TEACHING PHYSICS

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**Keywords:** natural scientific literacy, physics as science, aims and goals of teaching physics, teaching methods, didactic means.

One of the most important aims of teaching students in the general secondary educational institutions is formation and development of their ways of action on using knowledge they got for solving problems for continuous self-education, in real life and in their future professional activity. That ways of activity are parts of functional literacy of students.

Functional literacy represents integrative feature of character, which includes such components as mathematical, reading, natural scientific and financial literacy, as well as many important competence, and creative features of person. It is formed while learning wide specter of educational subjects, including physics.

Physics in the system of natural scientific disciplines plays fundamental role because it explores structure of mater and simplest forms of its movement and interaction and is tightly connected with other educational subjects, which study more difficult types of movement. That is why physics has high possibilities of forming functional natural scientific literacy of students. However, there is a need to create didactic support for the implementation of this opportunity in the process of studying in institutions of general secondary education.

**Material and methods.** For the purpose of correlation, let's compare the content of the concept of natural science functional literacy and the aims (goals) of teaching physics, formulated in the regulatory documents on the organization of the educational process.

Natural scientific literacy is understood as the student's ability to form an opinion about the problems associated with the natural sciences. This is expressed in student's ability to interpret scientific data, plan and carry out research, explain natural phenomena and technology, and find evidence.

Moreover, the study of the disciplines of the natural scientific cycle allows students to form reading components (studying information in the text, understanding, comprehending, extracting, interpreting and collapsing educational information) and mathematical (using the mathematical tools to output calculation formulas, convert units of measurement to the SI system, calculate the value physical quantities) [4].

The following skills are defined as the main aims and goals of teaching physics in institutions of general secondary education in the concept and educational standard of the subject "Physics":

- planning, fulfilling and valuation of the results of physical experiments, presentation of measurement results in tabular and graphical forms, identification of empirical dependencies on this basis;
- usage of various sources of information and computer technologies in the process of mastering knowledge and skills in physics, valuating verity of the used information used;

- conducting observations of natural phenomena, describing and summarizing the results of observations, using simple measuring tools to study physical phenomena;
- usage of acquired knowledge to explain various natural phenomena and processes, the principles of operation of the most important technical tools, to solve practical physical problems. [1, 3]

Achieving these aims and solving set goals corresponds to the need of development of functional natural scientific literacy among students. And for this it's important to apply those teaching methods and educational technologies that have a high educational potential for its development. These methods include the method of problem-based learning, the method of teaching as educational research, the solvation of practice-oriented and creative problems, individual homework.

**Findings and their discussion.** Practice-oriented tasks have a high potential in the development of natural scientific literacy, which is understood as educational tasks for describing the surrounding reality, connected with the formation of practical skills required in everyday life, including elements of production processes. The aim of these tasks is to form the ability of acting in socially significant situations.

The skillful usage of individual homework assignments plays an important role in the development of functional literacy. Their usage encourages the development of students' thinking, takes into account their individual characteristics. A variety of homework is not an aim in itself, but one of the ways to achieve the main aim – the development of functional literacy of students.

The technology of educational research is a student-oriented modern educational technology. Students in the educational process act as researchers who independently acquire knowledge using a variety of sources and materials. The main goal of the teacher in usage the technology of educational research is to prepare students for creative activity [2].

**Conclusion.** For the effective development of students' functional natural scientific literacy, a physics teacher needs to create an appropriate didactic system that includes modern educational technologies and didactic tools.

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