REFERENCES IN THE PROCESS OF SCIENTIFIC RESEARCH STUDY REQUIREMENTS

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Annotation: *One of the most important tasks facing professors and teachers of higher education institutions is to closely assist future professionals in conducting research work with scientific and methodological literature, methodological manuals and to determine their content.*

Methods. The scientific method is such a method of action that it solves certain types of scientific problems. Knowledge of the method is expressed in special instructions, manuals and methodologies. They describe the rules of action, as well as the conditions and objectives of the method, its capabilities, the nature of the results achieved using the method, and so on.

Within each discipline, special methods are developed adapted to its research objects (for example, in physics - the method of analysis of scales, in biology - the method of ringing birds, in psychology - the method of testing, in sociology - the method of questionnaire, in linguistics - the method of comparative analysis of languages, etc. .).

At the same time, in modern science it is important to transfer methods from one science to another (for example, the use of physical methods in chemistry (spectroscopic method), biology and medicine (radioscopy methods), history (radioactive analysis method), application of mathematical methods in natural sciences and social sciences.). [1]

In addition to specific methods, there are general methods used in many or even all disciplines. They are called general methods. They include all methods of rational thinking - analysis, synthesis, abstraction, generalization, induction, deduction, etc., as well as methods such as observation, experiment, modeling, idealization.

Like problems, techniques cannot be evaluated in terms of authenticity or falsity. [2] The method may be good or bad, it may or may not give the opportunity to solve a particular problem, but in all cases it is neither real nor fake. Sometimes any method can be called ‘real’, but this only means that this method ensures that the bottom of the truth is reached, i.e. it is a ‘good’, effective means of solving a particular problem. Similarly, the notion of ‘falsity’ used in relation to any method can only mean that the method is not suitable to solve the problem, i.e. ‘bad’, ineffective. [3]

Scientific evidence also performs two different functions in relation to theory: scientific evidence in relation to an existing theory either reinforces (verifies) it, or collides with it, and falsifies it. However, on the other hand, the theory is not just a generalization of the sum of scientific evidence obtained at the level of empirical research. It itself becomes a source of new scientific evidence. Thus, empirical and theoretical knowledge is a holistic phenomenon - the unity of two aspects of scientific knowledge. The interrelationships and movements of these aspects in a particular process of scientific knowledge, their interrelationships, determine the emergence of a consistent series of forms inherent in theoretical knowledge. The main forms of theoretical knowledge are: scientific problem, hypothesis, theory, principles, laws, categories, paradigms.

Scientific problem. Any scientific knowledge starts with a problem. In general, the process of development of human knowledge can be described as the transition from posing certain problems

to solving them, and then posing new problems. [4] But what is the real role of the problem? Why do scientific problems arise? What is the difference between the problem and the issue? What is the scope of scientific problems?

A problem is an issue or set of issues that occurs objectively in the process of cognitive development and has an important practical or theoretical significance to be solved. It is also a problem, a theoretical or practical issue that needs to be solved; in science is a contradictory situation that acts in the form of conflicting approaches in the explanation of any event, object, process, and requires an appropriate theory to solve it.

Putting the problem right is an important condition for solving it successfully. An incorrectly placed problem or a fake problem distracts from solving real problems. [5]

Problem statement is the first stage of the scientific learning process. When posing a problem, first of all, it is necessary to understand some situation as an issue, as well as to clearly understand the content of the problem, to describe it by distinguishing between known and unknown things.[9]

Scientific problems will be related to the subject or procedure. Problems related to the subject reflect the objects being studied, and problems related to the procedure reflect the methods of acquiring and evaluating knowledge. [6] In turn, there are empirical and conceptual types of subject-related problems, methodological and evaluation-related types of procedural problems. In order to solve empirical problems, in addition to a purely theoretical analysis of the material, it is necessary to perform certain actions with objects, although conceptual problems do not require a direct reference to existence. [7] Unlike subject matter problems, procedural problems are always conceptual in nature; the difference between procedural problems seems to be that methodological problems cannot be solved in the form of a single observation, while evaluation-related problems involve indicators and objectives that serve as criteria for science. [8]

The empirical problem implies primarily the search for data; answers to empirical problems can be found using scientific methods such as observation, experiment, measurement.

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