



Study of the Main Types of Scientific Research

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ABSTRACT

The purpose of scientific research is a comprehensive, reliable study of an object, process or phenomenon; their structure, connections and relations based on the principles and methods of cognition developed in science, as well as obtaining and introducing into production (practice) results that are useful for humans. Any scientific research has its own object and subject. The object of scientific research is a material or ideal system.

Keywords:

The purpose of scientific research, subject, fundamental research, applied research, search, the topic of scientific research is.

The subject is the structure of the system, patterns of interaction of elements inside and outside the system, patterns of development, various properties, qualities, etc.

Scientific research is classified according to the type of connection with social production and the degree of importance for the national economy; purpose; sources of funding and duration of research.

According to the types of communication with public production, scientific research is divided into works aimed at creating new technological processes, machines, structures, improving production efficiency, improving working conditions, developing a person's personality, etc.

According to the intended purpose, there are three types of scientific research: fundamental, applied, and development.

Fundamental research is aimed at

discovering and studying new phenomena and laws of nature, at creating new research principles. Their goal is to expand the scientific knowledge of society, to establish what can be used in practical human activities. Such studies are conducted on the border of the known and unknown, and have the greatest degree of uncertainty.

Applied research is aimed at finding ways to use the laws of nature to create new and improve existing means and methods of human activity. The goal is to establish how scientific knowledge obtained as a result of basic research can be used in practical human activities.

As a result of applied research, technical concepts are created on the basis of scientific concepts. Applied research, in turn, is divided into search, research and development works.

Exploratory research is aimed at identifying

factors that affect the object, finding ways to create new technologies and techniques based on the methods proposed as a result of basic research. As a result of research work, new technologies, experimental installations, devices, etc. are created. The purpose of development work is to select the design characteristics that determine the logical basis of the design. As a result of fundamental and applied research, new scientific and technical information is formed. The purposeful process of converting such information into a form suitable for industrial development is usually referred to as development. It is aimed at creating new equipment, materials, technologies or improving existing ones. The ultimate goal of development is to prepare materials of applied research for implementation.

According to the degree of importance for the national economy, scientific research is divided into:

the most important works performed under special republican scientific and technical programs approved by the Cabinet of Ministers of the Republic of Uzbekistan (if this program concerns the development of natural sciences, then the Academy of Sciences of the Republic of Uzbekistan); plans coordination plans of the Coordination Committee of the Republic of Uzbekistan for the Development of Science and Technology;

works carried out according to the plans of line ministries and departments; works carried out on the initiative and plans of research organizations.

Depending on the source of funding, scientific research is divided into state-funded, contractual and non-funded. State-funded scientific research is financed from the state budget. Contractual research is financed by contracting organizations on the basis of business contracts. Such organizations can be either industrial or research - based. Unfunded research is carried out under agreements on scientific cooperation.

The topic of scientific research is an integral part of the problem. As a result of research on the topic, they get answers to a certain range of scientific questions covering

part of the problem. Summarizing the results of answers on a set of topics can provide a solution to a scientific problem.

Под *Scientific questions* are usually understood as small scientific tasks related to a specific topic of scientific research.

Choosing the direction, problem, topic of scientific research and setting scientific questions is an extremely responsible task. Current directions and complex problems of research are formulated in the directives of the President and the Government of our country. The direction of research is often determined by the specifics of the scientific institution or branch of science in which the researcher works. Therefore, the choice of scientific direction for each individual researcher is often reduced to the choice of the branch of science in which he wants to work. Concretization of the research direction is the result of studying the state of production requests, social needs, and the state of research in a particular direction over a given period of time.

When choosing the problem and topics of scientific research, at the beginning, based on the analysis of contradictions of the management under study, the problem itself is formulated and the expected results are determined in general terms, then "the structure of the problem is worked out, topics, questions, performers are identified, and their relevance is established.

At the same time, it is important to be able to distinguish pseudo-problems (false, imaginary) from scientific problems. The greatest number of pseudo-problems is associated with insufficient awareness of researchers, so sometimes there are problems that are aimed at previously obtained results. This leads to a waste of scientists' labor and resources. At the same time, it should be noted that sometimes when developing a particularly relevant problem, it is necessary to duplicate it in order to attract various research teams to its solution in a competitive manner.

After substantiating the problem and establishing its structure, the topics of scientific research are determined, each of

which should be relevant (important, requiring prompt resolution), have scientific novelty, i.e. should contribute to science, and be economically effective for the national economy. Therefore, the choice of topic should be based on a special technical and economic calculation. When developing theoretical research, the requirement of economy is sometimes replaced by the requirement of significance, which determines the prestige of domestic science.

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