

*Ergasheva Gulnoza Yuldashevna,
teacher of the Department of Social Sciences,
Kokand State Pedagogical Institute*

SCIENCE AND TECHNICS IN THE HISTORY OF CIVILIZATION

Abstract: *This article discusses the impact of science and technology on civilization*

Keywords: *science, technology, method, term, phenomenon, system. revolution*

Аннотация: *В этой статье обсуждается влияние науки и техники на цивилизацию*

Ключевые слова: *наука, техника, метод, термин, феномен, система, революция*

Science is a special kind of human activity aimed at understanding the world, as well as a knowledge system as a result of this activity.

Distinctive features of science as a kind of activity:

- 1) scientific activities are carried out by specially trained people - scientists;
- 2) scientists study the nature of the phenomena and objects of the world, establish stable links between them-laws;
- 3) scientists use special methods of cognition (experiments, experiments, etc.) special equipment, instruments;
- 4) scientists use a special language (terms, symbols, formulas, etc.);
- 5) scientists are guided by the norms of professional ethics, which prohibit theft of ideas, falsification of observations and experimental data, distortion or concealment of information contrary to his views.

Science as a system of knowledge differs from other types of knowledge alongside features:

- 1) the explanation of phenomena by means of logical arguments accessible to human understanding, refusal of explanation with the help of magic, mysticism, belief in miracles, etc .;

- 2) Strict evidence and verifiability of the data obtained. Any researcher, recreating the conditions in which any scientific result is obtained, should be able to verify its truth.
- 3) objectivity and impersonality - scientific knowledge is cleared of personal sympathies and antipathies, beliefs and prejudices, interests, emotions, etc. ;
- 4) systematic - scientific knowledge is a collection of not isolated information, but a logically ordered system.

Science consists of many sciences. At present, there are several hundred sciences. Depending on the subject of the study, they can be grouped into three large groups: natural-study nature, socio-humanitarian-study the vital activity of man, technical-learn technique.

New scientific knowledge is produced by research institutes and laboratories, its storage and distribution is provided by libraries, museums, information centers, and printed publications.

The following periods can be distinguished in the history of science.

1. From the 1st millennium BC. up to the XVI century-the period of pre-science. At that time, there was a synthesis of philosophical and natural science knowledge. Representatives: Pythagoras, Euclid, Archimedes, Hippocrates and others.
2. XVII-XIX centuries.-Period of classical science. Science becomes independent of philosophy and religion. The foundations of modern natural science are laid, differentiation of sciences is taking place. Appear scientists-professionals, developing a system of university education for their preparation. There arises a scientific community with its own specific forms and rules of activity and communication (scientific academies, museums, libraries are created, scientific books and magazines are printed, etc.). Science studies the macro world. Representatives: Copernicus, Galileo, Newton, Lomonosov, Darwin, Mendeleev, and others.

3. XX century period of the non-classical science. Science began to study the microcosm and megamore. In the second half of the XX century, a scientific and technological revolution is taking place, the sign of which is the widespread introduction of scientific achievements into production and life in economically developed countries. The state and private firms are spending a lot of money to support the promising areas of scientific development. In developed countries up to 10% of the able-bodied population is involved in the work of scientific institutions. The modern world is largely formed by science. The reverse side of the great successes of science is that society was on the verge of self-destruction. Representatives: E.Resford (planetary model of the atom), A.Einstein (theory of relativity), N.Viner (cybernetics), S.Hocking (theory of "black holes"), etc.

4. The end of the 1990s - the XXI century. - the period of post-non-classical science. Science more and more is connected with philosophy, art, futurology. Scientists seek to find an answer to philosophical questions, what is a person, what is consciousness, what is life, draw parallels between physical theories and philosophical and religious teachings about the organization of the world and find common in them, are actively interested in eastern philosophy, more freely express original scientific hypotheses and projects.

During the pre-scientific period, scientists were distinguished by a disinterested desire to search for truth. Since the XVII century. science is increasingly oriented toward bringing practical benefits to society, to material production. The financing of science is constantly increasing. Accordingly, the whole system of science is put under the control of those who have power and money. Scientists insist on the autonomy of science, they defend their right to independently choose the problems of research and distribute the funds they release. They also believe that the scientist's business is to investigate, discover, design, and for the practical application of the results of scientific activity are the responsibility of politicians and production workers.

Opponents of the autonomy of science put forward the principle of social control over scientific activity. They argue that most scientists are narrow experts who are not able to assess public needs. The society must control how scientists spend the money they are giving away. It should prohibit inhuman and immoral means and methods of research, experiments whose consequences threaten the existence of mankind. The scientist should be responsible for the results and consequences of his activities, to ensure that scientific discoveries are not used for anti-human purposes. At present, the idea of social responsibility of scientists is universally recognized.

Since science causes double feelings in the public, two opposing approaches to its evaluation have been formed: scientism and antispecialism (scientism and antisessionism). Scientism is an ideological position expressed in a high appreciation of science and its role in society. It is believed that science should be the benchmark for other activities. Only the further development of science, first of all, of natural-mathematical and technical knowledge, can save mankind from the ills created by scientific and technological progress. Socio-humanitarian sciences are undermined or even denied.

Anti-centrism is an ideological position, whose supporters sharply criticize science and technology, which, in their opinion, is not able to provide social progress, improve people's lives. Modern science frightens people into engaging in militaristic projects, the possibility of calling such negative consequences of discoveries and inventions that threaten the continued existence of mankind (it means the creation of dangerous viruses and bacteria in laboratories, slavery under the power of machine intelligence, total "zombification" P.). Under the influence of anti-sentimentality in the cinema, a stereotype of a scientist-villain arose who, out of self-serving or misanthropic considerations, is ready to destroy the whole world. Anti-centrism believes that it is necessary to limit the further development of science, to develop the spiritual culture and morality of people.

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