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**ANALYSIS OF THE STAGES OF DEVELOPMENT OF TECHNOLOGIZATION AND  
INFORMATIZATION IN EDUCATION*****Panferova I.V.****PhD, Associate Professor, Puchon University in Tashkent****Kim Y.V.****teacher, Puchon University in Tashkent*

**Abstract:** Within the framework of the presented article, analytical work aimed at identifying the stages of development of technologization in education has been carried out. The results of the analysis have shown that the process of technologization of education has undergone several stages of evolution: technology, technologization, informatization and digitalization. These stages reflect the consistent development of the use of information and communication technologies (ICT) in the educational process.

**Key words:** technology, educational process, integration, technologization, transformation, informatization.

Modern society, including all its changes, such as the evolution of educational processes, the experience of various innovations in pedagogy and school education, as well as the results of scientific research and discoveries, requires systematization of its activities. In this context, the technological approach can be an effective solution to this problem.

The concepts of "production" and "reproduction" associated with the integration of technical progress in various areas of theoretical and practical activity brought the concept of "technology" to pedagogy. In engineering and technical literature, technology is defined as a set of methods or techniques for processing raw materials in the process of manufacturing a certain product. The concept of "technology" includes a system of actions that can be used to improve the environment and create both spiritual and material values. In the modern world, technology plays a key role in scientific and technical progress.

The application of the term "technology" to the education system as a whole can contribute to a clearer and more systematic understanding of the learning processes and their management. [1]

Pedagogical technology, as a new direction in the development of pedagogical science, originated in the early 1960s in the United States and later in England. Until the 1970s, technological concepts were practically not used in Russian pedagogy due to the reluctance of representatives of traditional didactics and pedagogy to connect the educational process with production. However, in the 1970s and 1980s, the idea of complete controllability of the educational process with clearly defined goals, the achievement of which can be described and determined, began to take shape in pedagogy. Pedagogical technology is defined as a study to identify principles and develop methods for optimizing the educational process, as well as analyzing factors that increase its effectiveness, constructing content and evaluating the methods and forms used. [2]

G.K. Selevko once described the structure of pedagogical technology in three aspects:

– scientific aspect: pedagogical technologies are considered as part of pedagogical science, which studies and develops goals, content and methods of teaching, and also designs pedagogical processes; – the process-descriptive aspect: this is a description (algorithm) of the process, which includes the goals, content, methods and means necessary to achieve the planned learning outcomes;

– the process-effective aspect: this is the implementation of the pedagogical process, including work with personal, instrumental and methodological pedagogical tools. [3]

From which we can conclude that pedagogical technology acts as a scientific direction studying the most effective teaching methods, as well as a system of methods, principles and instructions used in the educational process, and as an actual learning process.

The variety of interpretations of the term "pedagogical technology" proposed by various authors can be considered through three key aspects: scientific, process-descriptive and process-effective.

The scientific aspect of considering pedagogical technology is reflected in the definitions proposed by the following scientists:

– a system of algorithms, methods and means for solving the tasks proposed by science (I.P. Podlasy, 1996) [4];

– a set of psychological and pedagogical attitudes that determine a special set and arrangement of forms, methods, ways, techniques of teaching and educational means; it is an organizational and methodological toolkit of the pedagogical process (B.T. Likhachev, 1998) [5], etc.;

– a set of various techniques of pedagogical influence as natural and harmonious behavior in the context of modern culture at the level of its high spirituality and psychological and pedagogical understanding of the unfolding situation (N.E. Shchurkova, 2002). [6]

The procedural and descriptive aspect of the consideration of pedagogical technology can be traced in such definitions as:

– content technology for implementing the educational process (technology is understood as a set of methods and means aimed at organizing the educational process) (V.P. Bospalko, 1989) [7], etc.;

– an ordered set of actions, operations, and procedures that instrumentally ensure the achievement of the predicted result in the changing conditions of the educational process (V.A. Slastenin, 1997) [8];

– a description of the process of achieving the planned learning outcomes (I.P. Volkov, 1998) [9];

– a hierarchical and ordered system of technological procedures for designing the educational process, the strict implementation of which guarantees the achievement of the planned result (V.M. Monakhov, 2000). [10]

The process-action aspect of considering pedagogical technology is noted in the following definitions:

- such a structure of the teacher's activity, in which all the actions included in it are presented in a certain integrity and sequence, and the implementation assumes the achievement of the necessary result and has a probabilistic predictable nature (G.Yu. Ksenzova, 2000) [11], etc.;

- a system of functioning of all components of the pedagogical process, built on a scientific basis, programmed in time and space and leading to the intended results (G.K. Selevko, 2005).

In scientific literature, the concept of "pedagogical technology" is perceived in different ways. On the one hand, it is considered as a scientific direction studying the most effective teaching methods. On the other hand, it is a description of the learning process, including the goals, content, methods and means necessary to achieve the specified educational results. In addition, pedagogical technology is perceived as a process that includes the functioning of various aspects, such as the personal qualities of the teacher, the tools used and methodological approaches.

Despite various interpretations of the concept of "pedagogical technology", all scientists agree that it is associated with the development and implementation of a systematized educational process that is aimed at achieving clearly defined goals and ensures their successful implementation. In pedagogical discourse, the term "pedagogical technology" is often associated with the concepts of "educational technology", "educational technology" and "methodology". Let us consider various interpretations of these concepts.

Educational technology is defined as:

- a set of concepts of expected educational results, methods for assessing the current level of students' knowledge, choosing appropriate learning models and criteria for optimizing the choice of a model for specific educational scenarios; [12]

- a systematically organized process of interaction between teachers and students, the purpose of which is to achieve the specified educational goals. [13]

Teaching technology is a technology of pedagogical methods, a technology of constructing the educational process, which includes two interrelated stages: organizing the student's activities and monitoring this activity.

Teaching technology, in turn, is understood:

- as a synonym for the concept of "methodology" or "form of organizing training" – the technology of tests, the technology of organizing group activities;

- as a set of all methods, means and forms used in specific pedagogical systems (V.V. Davydov's technology, traditional teaching technology, etc.). [14]

Summarizing the conceptual aspects of the structure of pedagogical technology, we present it as follows:

The essence of technology: it must correspond to the set tasks and characterize the idea, features and qualities, as well as the main direction of modernization of the educational process.

The purpose of technology: the main areas of activity are determined and provide a guideline for achieving specific positions.

The concept of educational technology: concisely explains the principles and features of this technology.

Organizational characteristics: reflect theories and ideas of education, compliance of the goal of technology with the needs of society and the state.

Methodological characteristics: reveal the interaction of various methodological tools, planning, analysis and other aspects.

Educational and methodological support: includes technical teaching aids, curricula, teaching aids and other resources.

In recent years, a significant number of studies have been published in the scientific literature on modern trends in the development of education. Well-known scientists and educators such as Rebecca Oxford [15], Mark Warshauer [16], Claire Kramsch [17], O.N. Igna

[18], A.M. Sanko [19], D.S. Kostylev, L.I. Kutepova, A.V. Trutanova [20] and others have analyzed the main trends in the development of higher education. The basis of pedagogical technology is a scientific approach and advanced practical experience.

The information age, characterized by a steady increase in the volume of data, poses a challenge to educational institutions to ensure the effective transfer of knowledge and skills. For this purpose, new methods aimed at the needs of modern students are being actively studied. One of the key areas in this process is the technologization of education, which is based on the use of modern educational and digital technologies.

An analysis of previous scientific studies of the concept of "technologization" revealed that its interpretations can be ambiguous and varied. In a narrower sense, the term "technologization" is applicable to excessive systematization of the educational process as a whole.

A.V. Gladkov and O.I. Vaganova define technologization as a method of structuring human activity through self-analysis, rationalization and typification of material and technological means [21]. In turn, V.P. Glazychev notes that technologization is a conscious activity of people based on establishing connections between operations and procedures necessary to achieve specific goals. [22]

In the educational sphere, we interpret the term "technologization" in two senses: firstly, as providing the process of training and education with innovative equipment; secondly, as the creation, selection and application of technologies in pedagogical practice. The objects of the process of technologization of the education system are the content of training, methods of interaction between subjects of the educational process, learning objectives, methods of assimilation, analysis and presentation of information.

In conclusion, I would like to note that as a result of technologization, individual value models of students' behavior are formed, which contributes to their competitiveness and demand in the labor market.

Technologization contributes to the individualization of the presentation of educational information. In the field of professional education, technologization allows presenting information in various forms (text, audio, visual), contributes to improving skills in searching, processing and structuring material. [23] Each teacher attaches importance to increasing the efficiency of the educational process, so it is difficult to imagine and conduct a modern lesson effectively without the use of innovative pedagogical technologies. [24] Technologization of the educational process covers all types of activities of the administrative, scientific and teaching staff of the educational institution on the design, methodological support, organization, implementation and evaluation of the results of the educational process.

Technologization in the education system has led to the renewal and introduction of new forms, methods and means in the educational process of professional educational institutions. In addition, to achieve specific results that meet regulatory requirements and public expectations, including the processes of informatization of science and production in accordance with educational standards, it is necessary to constantly improve the quality of secondary vocational and higher education. This renewal of the education system should be aimed, first of all, at training workers and specialists who are able to adapt to constantly changing living conditions and successfully perform their professional duties.

Technologization of education includes research into the patterns and methods of optimizing the educational process using modern educational and digital technologies. The emergence of information and communication technologies and the mass computerization of society have led

to fundamental changes in education. Scientists note the transition from industrial thinking to information thinking, since modern activities are increasingly based on working with information in digital form. [25]

The introduction of information and communication technologies and access to the Internet have led to significant transformations in the field of education, requiring a revision of pedagogical approaches to teaching a new generation. The development of information thinking is becoming a priority, since modern society is focused on processing information, including digital data.

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