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## EDUCATIONAL TECHNOLOGY IN HIGHER VOCATIONAL EDUCATION

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*The article deals with the educational technologies in higher vocational education. It provides an analysis of existing educational technologies and highlights the most promising. It makes emphasis on dual and project method technologies which are the most appropriate for higher vocational education.*

**Key words:** *student-centred education, module-rating technology, dual technology, project-based learning.*

In the modern system of higher vocational education the choice or development of technology for teaching of a particular discipline which is made by teacher based on his personal beliefs and constitutes his individual style of pedagogical activity. There are many educational technologies aimed at implementing the goals of the education system. The leading among them is the technology of *student-centred education*, which primary focus on the individual. *Student-centred education* is of great interest to many educators and psychologists (O. B. Episheva, N. N. Surtaeva, G. K. Selevko). Although the term *learning technology* is not common in traditional pedagogy, however it is actively used at present. For example, *education technology* is seen as a systematic method of creation, application and definition of the process of teaching and learning, taking into account technical and human resources and their interactions, aiming at optimizing forms of education. On the one hand, technology is the totality of methods and means of processing, representation, modification and presentation of educational information, but from the other side it is a science of how the impact of the teacher on the students in the learning process with the necessary technical or informational tools. In the technology of teaching the content, methods and means of learning are interrelated and interdependent. And the main criterion of evaluation of educational technology are its efficiency, effectiveness and practical value.

*Educational technologies* according to G. K. Selevko, should meet the requirements of scientific, technological, sufficient completeness and reality of its implementation. These requirements are considered from the position of the subject and object of training and education.

The main criteria are the adaptability of the system (complexity, integrity) scientificity (conceptual role, developing character); structure (hierarchy, consistency, algorithmicity, continuity, variability), procedural (controllability, instrumentality, diagnosticity, prognosticability, efficiency, optimality, repeatability).[4,p.22].

The concept of *educational technology* has appeared in 20-s of XX century and had other names: pedagogical technology, education technology, learning technology. This was due to the technological revolution in the field of physics, chemistry, energetics, biology, mathematics, computer science and other sciences, which, of course, is reflected in the education system. However, the concept of educational technology has a broader meaning than the concept of educational technology, because in addition to teaching, includes social, socio-political, administrative, cultural, psycho-pedagogical, medico-pedagogical, economic and other related aspects.

Pedagogy traditionally covers training and education, and technological approach in pedagogy formed on the basis of new educational technologies, which provides «accurate instrumental control of the educational process and guaranteed achievement of the set educational goals». [4, p.30].

*Educational technologies*, involving the design of learning activities, in contrast to the methodic lesson plans for teachers leading to high stability success with any number of students. In modern conditions, when the computerization of the teaching process has become a necessity, instructional design (pedagogical) is the only requirement for its effective implementation. There is no unambiguous interpretation of the concept of educational technology in science. The opinions were divided. According to academician G.K.Selevko, the head of the Center for development and selfdevelopment of the International Academy of Sciences of pedagogical education, there are four positions:

**1) Educational technology as the production and use of the facilities, hardware and software for the learning process**

Representatives of this position (B. T. Likhachev, S. A. Smirnov) consider the educational technology as a combination of psychological-pedagogical systems, forms, methods, teaching techniques, educational means and pedagogical ethics. By their view, «pedagogical technology - a set of psychopedagogical attitudes that define a special set and layout of forms, methods, teaching techniques, educational tools of teaching process» [B. T. Likhachev]; «educational technology is a new type of training» [S. A. Smirnov].

**2) Educational technologies is a communication process or method of implementation of educational tasks**

Representatives of this position ( B. Skinner, S. Gibson, M. Gillette, T. Sakamoto) applied behavioral science and systems analysis to improve learning. They believe that educational technology is a process of communication (method, model, technique exercises), which is based on certain algorithm, a program, a system of interaction of educational process participants.

**3) Educational technology is a vast field of knowledge, based on data from the social, managerial and natural sciences**

The representatives of the third position (V. V. Guzeev, R. Kaufman, M. Eraut, Pidkasisty P. I., S. H. Wedemeyer) consider educational technology as a vast area of knowledge concerning data on the social, managerial and natural sciences.

**4) Educational technology is a multidimensional process**

Representatives of this position, consider educational technology as a multidimensional process (V. I. Bogolyubov, M. V. Klarin, V. V. Davydov, G. K. Selevko, E. V. Korotaeva, V. E., Steinberg, P. D. Mitchell, R. Thomas). In particular, G. K. Selevko notes that «the pedagogical technology is a operation system of all components of the pedagogical process, built on scientific basis, programmed in time and space and leaded to the planned results». [4, c.39].

From the above we can assume that educational technology is a new attainment level in education and its main purpose that it allow to transfer the learning process to the stage of preliminary planning with the subsequent reproduction. Educational technologies are aimed at achieving the goals through personal development, goal setting and objective quality control of assimilation of learning material, contribute to the realization of educational functions and the personality-oriented paradigm of learning.

At the same time, they contribute to the realization of individual educational trajectories of students of technical colleges, as they help themselves to set goals independently and to find ways to address them. Educational technologies are now widely applied in the education system of different countries and they are many. Among them, the most popular module-rating technology of training , credit-modular technology of education, control and correcting training, technology of individual educational trajectories and etc. However, in our opinion, the most promising technology for vocational education is dual education technology, which involves a theoretical and practical knowledge, simultaneously. This technology is widely used in Europe and Canada, some regions of

Russia, and was first applied in the vocational school after Yeznik Mosyan in the cultural capital of Nagorno Karabakh, Shushi.

According to the dual technology the education is based on the integration of SFA's<sup>1</sup> program, the main advantage of which is the absence of a gap between theory and practice. In the dual task training students in the early stages of training to acquire certain expertise and skills for the optimal choice, as in the diploma indicates multiple qualifications simultaneously. During the training develop such personal qualities as ability to work in a team, responsibility for the charged work area. The advantages of the dual system lie in the fact that students contemplate a new future profession in the process and take a reasonable decision on correctness of choice of profession. And among other things, future engineers can provide some additional income and work experience, which is extremely necessary for employment in modern conditions.

Of course, each country has its own specific features of introduction of the dual system in vocational education. For example, in Germany, which is one of the leader in the system of European education, you can get dual training among such giants as Volkswagen, REWE, SIEMENS, BMW, etc. Enterprises are interested in the dual system of vocational education, because they get an opportunity to prepare qualified young personnel.

Another promising technology for higher vocational education is a *method of projects*. *Project method* as a pedagogical technique involves the combination of research, problem-based methods, which are quintessential creative. The teacher in the framework of the project plays the role of developer, facilitator, expert, tutor. At the same time, the project method is a set of teaching and learning techniques that allow to solve a particular problem is the result of independent actions of pupils with obligatory presentation of results. The technology of the method of projects is the development of cognitive skills of students, abilities to independently design their knowledge, skills to navigate in the information space, development of critical thinking. Method of projects is focused primarily on independent student activity - an individual, a group, which they perform during a certain period of time. Students on this technology, acting individually or in a group, have to «go balls to the wall» and apply their knowledge when solving problems. For students of technical colleges *method of projects* is the possibility of maximum disclosure of its creative potential, because the methods of management of projects involves several stages: planning, searching, generalization, presentation and protection. And since the project activity is aimed at cooperation of teachers and students, in some way is a form of assessment in lifelong learning process. *Method of projects* helps to improve the quality of education, efficiency of educational process. This technology can be used in almost any discipline of a technical college because it offers the organization the learning process in the form of establishing and implementing a set of projects.

To summarize, I would like to note that all educational technologies bring together a number of signs, the implementation of which in practice shows a significant difference in the educational process on the basis of pedagogical technology from educational process organization on the basis of the class- and-lesson system. Such signs include the changing nature of teacher's activity, changing the nature of the activities of students (from an object turned into a subject of educational process), the increase in the proportion of school time to extracurricular independent work, providing students the choice to learn at a pace appropriate to their individual abilities and inclinations, granting the right of way of learning, the learning of an individual educational trajectory.

Aiming the optimization of forms of education, pedagogical technology of activization of informative activity of students on the one hand. On the other hand, they are focused on the design activity of the teacher, giving educators themselves to design a tailor-made pedagogical technology that promotes self-development, transformation, flexible adaptation to the specific conditions of learning, leading to greater success of students and therefore the teacher. New pedagogical technologies allow us to predict outcomes and manage the teaching processes; to analyze and systematize the scientific basis for practical experience and its use; to solve the complex educational

and socio-educational problems; to provide a supportive environment for personal development; optimal use of available resources; to choose the most effective and to develop new models to address emerging socio-pedagogical problems.

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### Ս.Պ. Գասպարյան

*Շուշինի տեխնոլոգիական համալսարան*

Հոդվածը նվիրված է բարձրագույն մասնագիտական տեխնիկական կրթական համակարգի կրթական տեխնոլոգիաներին: Այստեղ արվում է առկա մանկավարժական տեխնոլոգիաների վերլուծությունը երկակի տեխնոլոգիաների և նախագծերի տեխնոլոգիաների մեթոդի շեշտադրումով, որոնք առավել ընդունելի են մասնագիտական տեխնիկական կրթական համակարգում:

**Բանալի բառեր.** կրթական տեխնոլոգիա, մանկավարժական տեխնոլոգիա, մոդուլավարկանիշային տեխնոլոգիա, երկակի տեխնոլոգիա, նախագծերի եղանակ:

## ОБРАЗОВАТЕЛЬНЫЕ ТЕХНОЛОГИИ В СИСТЕМЕ ВЫСШЕГО ПРОФЕССИОНАЛЬНО-ТЕХНИЧЕСКОГО ОБРАЗОВАНИЯ

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Статья посвящена образовательным технологиям в системе высшего профессионально-технического образования. В ней дается анализ существующих педагогических технологий и делается акцент на дуальной технологии и технологии метода проектов, которые наиболее приемлемы в системе профессионально-технического образования.

**Ключевые слова:** образовательная технология, педагогическая технология, модульно-рейтинговая технология, дуальная технология, метод проектов.