

## INNOVATIVE TECHNOLOGIES IN MODERN EDUCATION

**Farida Khurazovna Aymatova**

Senior lecturer of the department, Social-humanitarian and exact sciences, Tashkent  
State Economic University  
E-mail: [faridochca@mail.ru](mailto:faridochca@mail.ru)

### ABSTRACT

The article describes issues based on analyzing theoretical basis of application innovative methods in teaching process as a core of modern education. Currently, significant changes are taking place in the educational policy of our country. This is due to the transition to the position of personality-oriented pedagogy. One of the tasks of modern education is to unlock the potential of all participants in the educational process, to provide them with opportunities to display their creative abilities. The solution of these problems is impossible without the implementation of the variability of educational processes, in connection with which there are various types of educational institutions that require deep scientific and practical processes.

**Keywords:** educational processes, modern education, innovation, innovative methods.

### INTRODUCTION

The world today is united by concern for the education of a citizen of the entire planet. The international educational space is intensively developing. Therefore, the world community is striving to create a global strategy for educating a person, regardless of his place of residence and educational level.

Nowadays, trends in the development of the world educational space are predicted, types of regions are distinguished on the basis of the interaction of educational systems and their response to integration innovation processes.

The innovative process in education is a set of procedures and means by which a didactic idea is transformed into an educational innovation. Innovation activity is a set of measures and technologies to ensure the innovation process at a particular level of education, as well as this process itself. The main functions of innovation activity include changing the components of the pedagogical process: the goals and content of education, means, methods and forms of education, management systems, etc.

The structure of innovative activity includes: scientific search, creation of innovation, implementation of innovation, reflection of innovation. The main result of the search stage is the



formulated innovation problem, goals and objectives of innovation. What follows is an innovative project of planned transformations. At the implementation stage, innovative activity includes the following actions: program-scenario, organizational-managerial, experimental-evaluative and design-translational. In the process of reflection, the obtained results are correlated with the goals set; the resulting product is compared with its original image (model). The reflexive stage of innovation activity performs the function of feedback.

Thus, the activity that ensures the transformation of an idea into an innovation, and also forms a system for managing this process, is an innovative activity.

In the innovation process, four interrelated activities are distinguished: methodological, research, pedagogical and educational.

Methodological activity is aimed at developing the methodology of the innovation process; it is carried out by the methodologist.

Research activities performed by scientists are aimed at studying the activities of teachers and students. The product of his activity is pedagogical innovation (a description of the teacher's pedagogical activity within the framework of innovation).

The pedagogical activity of an innovator teacher is aimed at organizing the learning activities of students. The product of his activity is the educational process into which innovation is introduced (innovative educational process).

Educational activities of students aimed at mastering knowledge, skills, and personal development in terms of innovation.

Innovative changes in the education system of our country are going in the following directions: changing the goals and content of education at all levels, starting from kindergarten; bringing them into line with humanistic guidelines and the requirements of the time; development and implementation of new educational standards based on a competency-based approach, development and implementation of new educational technologies; informatization of the entire education system; introduction of specialized education in secondary school; application of methods and forms of individualization of education; creation of conditions for self-determination and creative development of the individual in the learning process; creation and development of creative innovative teams of educational organizations; combination of the educational process with the research work of teachers, students and much more.

In view of the multidimensionality of innovative activity in education, we confine ourselves to considering only one problem - the development of modern teaching technology.

An analysis of foreign and domestic scientific and pedagogical literature allows us to conclude that pedagogical technology is connected with a systematic approach to education, covers all elements of the pedagogical system: from goal setting to designing the entire didactic process and testing its effectiveness. Pedagogical technology should be considered as a systematic and consistent implementation in practice of the designed learning process, as a system of ways and means to achieve the goals of managing this process. Modern learning technology is a systematic approach to design, implementation, control, correction and subsequent reproduction of the learning process.

## METHODS AND ANALYSIS

Innovative technologies are innovations and changes in the pedagogical process and teacher's and student's activities, and mainly interactive methods are fully used in its implementation.

Interactive methods are called group thinking, that is, methods of pedagogical influence, which are part of the educational content. The uniqueness of these methods is that they are implemented only through the joint activity of pedagogic students.

Such a process of pedagogical cooperation has its own characteristics, which include:

To force the student not to be indifferent during the lesson, to think independently, create and search;

Ensuring that students have a constant interest in knowledge during the educational process;

The student should strengthen the student's interest in knowledge by independently approaching each issue creatively;

Organization of always cooperative activities of the teacher and the student. Researchers (A.L.Prigozhin, B.V.Sazonov, V.S.Tolstoy, A.G.Kruglikov, A.S.Akhiezer, N.P.Stepanov, etc.) distinguish two approaches to studying the components of innovation processes: the individual microlevel of innovation and the microlevel of the interaction of individually introduced innovations.

In the first approach, some new idea introduced into life is highlighted. In the second approach, the interaction of new ones introduced separately, their unity, competition and eventual replacement of one by another. Scientists distinguish the concept of periodicity of life when analyzing the microstructure of the innovation process. This concept stems from the fact that innovation is a measurable process.

In the literature on pedagogy, a scheme of the innovation process is given. It covers the following steps:

1. The stage of the birth of a new idea or the emergence of a new concept. It is also called the discovery phase.
2. Invention, that is, the stage of innovation.
3. The stage of practical application of the created innovation.
4. The stage of spreading the news, its wide application.
5. The stage of dominance of innovation in a certain field. At this stage, the novelty loses its novelty, its effective alternative appears.
6. On the basis of a new alternative, the stage of reducing the scope of the innovation through replacement.

V.A. Slastyonin considers innovation as a set of purpose-oriented innovation creation, wide distribution and use process, and its purpose is to satisfy people's needs and aspirations with new means.

The authors of the systematic concept of innovation (A.I. Prigozhin, B.V. Sazonov, V.S. Tolstoy) distinguish two important forms of innovation processes.

An innovation to the first form is introduced as a simple development. This applies to organizations that are adopting the product for the first time.

The second form refers to the large-scale development of the innovation.

Innovation is both an internal logic and a dynamic system that develops legitimately over time and expresses its interaction with the environment.

The concept of "novelty" occupies a central place in pedagogical innovation. It also arouses interest in special, conditional, local and subjective innovation in pedagogical science.

Private news V.A. According to Slastenin, the current modernization involves updating one of the elements of a certain system product. Conditional innovation is a combination of certain elements that lead to complex and progressive innovation. Local novelty is determined by the use of novelty in a concrete object. Subjective novelty is determined by the fact that the object itself is new for a given object. The concepts of novelty and innovation are different in scientific areas. Innovation is a tool: a new method, methodology, technology, etc.

V.I. Zagvyazinsky defined the new concept and said that the new in pedagogy is not only an idea, but also approaches, methods, and technologies that have not yet been used. However, the elements of this pedagogical process are complex or separately taken elements, and reflect the advanced beginnings of effectively solving the tasks of education and upbringing in changing conditions and situations.

The theoretical basis of the new learning technology are: activity, competence and research approaches, as well as the concept of student-centered learning. Let's call this technology integrative because it integrates many approaches.

The basis of the methodology of integrative learning technology, first of all, should be based on an activity approach. As you know, the psychological structure of activity includes the subject, goals, motives, and means of activity, actions and operations, as well as the result of activity. The subject of the joint activity of the teacher and students is the content of the studied disciplines: concepts, laws, principles, rules, tasks, problems and other educational elements. The goals and content of training are reflected in educational standards, curricula and textbooks. In integrative learning technology, a joint activity of a teacher and students is designed, aimed at solving educational problems and problems, in the process of solving which, students acquire the knowledge, skills and abilities provided for in the curricula. The educational and cognitive activity of students should be organically combined with research, communication, practical and other activities aimed at the formation and development of competencies provided for by the State Educational Standards.

When determining the goals and content of training, one should rely on a competency-based approach. In accordance with the requirements of the State Educational Standards of the new generation, competencies are laid as the basis for the learning objectives, which are refined through knowledge and actions to be mastered. One of the fundamental goals of training a specialist at a university is the formation of his professional competence. Professional competence includes a system of knowledge, skills and abilities, abilities that allow a specialist to competently judge issues in the field of professional activity, as well as personality traits that enable him to successfully solve a certain class of professional tasks.

The competence of a young specialist includes social and personal, general scientific, economic, organizational, managerial and special competencies. A detailed description of these competencies in the form of a list of knowledge, skills and abilities in a particular specialty becomes the content of the Federal State Educational Standard of the new generation.

In addition, as part of the professional competence of a specialist, it is necessary to single out a professional orientation: interest in the profession, readiness for professional activity, the desire to apply their knowledge, skills, and abilities in the chosen profession.

One of the innovative approaches to education is a research approach, which is aimed at developing students' skills and abilities of scientific research, at the formation and development



of creative abilities (creativity). Research can be called this type of training, when the study and assimilation of knowledge, skills and abilities is carried out in the process of research activities of the student under the guidance of a teacher.

Exploratory learning is a special approach to learning, built on the basis of the natural desire of a person to independently study the world around him. In research teaching, the educational process is carried out on the basis of the student's independent search for new cognitive landmarks. This allows you to ensure that learning involves the assimilation of new information through the organization of research activities of students. In psychological terms, the educational and cognitive activity of a student, under certain conditions, approaches the research activity of a scientist. The difference is that the student in the learning process acquires knowledge that is subjectively new (for him), and the scientist obtains new knowledge through research in the relevant branch of science (for society).

In the modern theory of research learning, there are three levels of its practical implementation:

- the teacher poses a problem and outlines a strategy and tactics for solving it, the solution itself will have to be found by students;
- the teacher poses a problem, but students are already looking for a method of solving it on their own;
- the formulation of the problem, the search for methods of its study and the development of solutions are carried out by students independently.

Research is always creativity, and ideally represents a variant of the disinterested search for truth. It is extremely important in developing the creative abilities of students in the learning process. Research activity should initially be freer, practically unregulated by any external installations.

In the traditional system of education, the content of education is educational information to be mastered, as well as methods of action for the application of acquired knowledge. With a research approach, the content of education is based not only on knowledge and skills, but also on a series of problematic tasks, in the process of solving which students develop creative abilities.

One of the modern types of developmental learning is student-centered learning. In this case, learning is understood as a joint activity of a teacher and a student, aimed at the individual self-realization of the student and the development of his personal qualities in the educational process.

Personally oriented education should be considered as an organization of the educational process in accordance with the needs, interests, inclinations and abilities of students, taking into

account the requirements of society for the moral, intellectual and professional level of training future specialists. We are talking about education, which focuses not only on knowledge, skills and abilities, but mainly on the personality and life of the student, i.e. on his moral character, culture, worldview, interests, intellect (quality of mind), relationships, emotions, health and lifestyle.

The personality-oriented approach is considered as the construction of a pedagogical process focused on the development and self-development of the individual's personal properties. Along with the experience of assimilation and application of knowledge, ways of solving problems and creative experience, the student must master the experience of "being a person".

The educational process in general and the technology of education in particular are based on a certain system of principles. The principles of integrative learning technology should be based on general patterns established by psychological and pedagogical science, and at the same time express specific patterns. As is known, a system of didactic principles has been developed in pedagogy, including such principles as: the unity of education and upbringing; scientific nature of education; connection of theory with practice; systematic training; consciousness and activity of students; visualization of training; strength of knowledge. The design and implementation of any learning technology is based on these principles. However, in the integrative learning technology, it is necessary to highlight specific principles. Since it combines various concepts, approaches and teaching methods, it should be based on the following didactic principles: modularity; individualization; flexibility; cooperation (parity); feedback.

The principle of modularity involves the use of modules in the learning process as the main means of mastering the content of educational material by students. In accordance with this principle, training is built on modules designed to achieve specific didactic goals.

**DISCUSSIONS.** Such scientists as T.I. Shamova, M.M. Potashnik, N.P. Kapustin [5, p. 352] believe that the management of the innovation process in the context of the holistic development of the school should be carried out comprehensively and include the following aspects:

- working with teachers, students, parents,
- improving the work of the aggregate subject of intra-school management in order to maximize the use of resources available at the school;
- implementation of relations with the environment surrounding the school in order to most fully meet the educational needs of the society and attract additional resources to the school;

- implementation of control, analysis and regulation of innovation activities;
- implementation of information support for innovation activities.

M.V. Clarin [4, p. 18], for example, he puts the following meaning into the concept of "innovation": "Innovation refers not only to the creation and dissemination of innovations, but also to transformations, changes in the way of activity, the style of thinking that is associated with these innovations." The authors of works on pedagogical innovation M.S. Burgin, V.I. Zagvyazinsky, S.D. Polyakov, V.M. Polonsky, M.M. Potashnik, N.R. Yusufbekov [8, p. 20-26] and others, the concept of "new in pedagogy" is correlated with such characteristics as useful, progressive, positive, modern, advanced. We share this opinion and believe that pedagogical innovation is an innovation in pedagogical activity, changes in the content and technology of teaching, education, aimed at their improvement.

The opinion of V.I. Zagvyazinsky [4, p. 8], who believes that what is new in pedagogy is not only ideas, approaches, methods, technologies that, in the presented form, in such combinations, have not yet been put forward or have not yet been used, but it is also a complex of elements (or individual components of the pedagogical process) which carry a progressive beginning, allow in changing conditions and situations to effectively solve the problems of upbringing and education.

In the works of S.M. Godnin, the student's personal qualities are highlighted as a subject of the pedagogical process. It includes the following: understanding the purpose, tasks and instructions of the educational process adopted for the current and future stages of education; mastering the activities of intellectual work; appropriate professional self-education and independent study, excellent ability to overcome difficulties, satisfaction with expanding intellectual and professional opportunities and prospects for growth and gaining a strong position, fulfilling the function of one's social role to have an active attitude and so on.

The important elements of the innovation pedagogical process are self-management and self-mobilization of the individual. One of its most important directions is the development of students' cognitive activity.

This direction includes the activity of activating students' academic work, determining their professional specialization.

The main directions are the integration of education, science and production, transition to new principles in their interaction.

Thus, the analysis of the theory of innovative activity factors leads to the conclusion that its most important direction is humanistic axiology.



The axiological approach to innovative activity means that a person devotes himself to the process of creating innovation, a set of pedagogical values created by him.

Axiology considers man as the highest value and the only goal of social development.

The innovative activity of the teacher is considered as a creative process and a result of creative activity.

V.A. Slastenin approaches the teacher's innovative activity from an acmeological point of view.

B.G. Anan'ev, N.V. Kuzmina, A.A. Derkach and others think about the most creative periods of human life, the stages of maturity with increasing the effectiveness of professional activity. They dealt with the issues of professionalism of mature people, mental laws in the heyday of personality development, and the issues of getting a father from the heights of reaching professionalism.

V.A. Slastenin substantiated the subjective and objective factors of acmeology that lead to high professionalism and a long creative life of a specialist. Objective factors include the quality of education received, and subjective factors include a person's talent and ability, responsibility for effectively solving production tasks, and approach to specialists.

V.A. Slastenin defines the main tasks of realizing creative individualism as follows:

- enrichment of culture that has acquired a social essence;
- updating pedagogical process and personal knowledge;
- finding new technologies that set effective and relevant standards;
- ensuring the individual's development based on self-determination and self-expression.

In this way, the formation of the teacher's creative individuality is understood as a dynamic innovative process of personal development and renewal.

Effective self-awareness, which characterizes creative individuality, includes: the ability to understand the uniqueness of one's personality based on comparison with others; a set of creative visions and ideas about oneself; integrity and harmony, internal unity of individual creative identity; the process of dynamism and continuity of the individual in his development and his formation as a creator; that a person can express himself and is ready to do certain things; to be able to present oneself as a creator and understand one's place in personal and social situations (V.A. Slastenin).

According to N.M. Gnatko, potential creativity is a creative activity that means the potential location of an individual, which is theoretically ready to become active creativity under certain external conditions. Potential creativity is a necessary subjective condition of creativity.

Creativity in activity - creates connections of individual descriptions of potential creative individual with a description of one or another type of activity, which ensures the direct preparation of the performer of creative activity in a certain type of activity. Active creativity is the most important subjective condition of creativity.

Research shows that potential creativity is actual creativity. Transferring it to creativity in activity is carried out by making fundamental changes in its mastery by the carrier (subject) of a certain type of activity.

V.A. Slastenin, agreeing with the views of N.M. Gnatko about transforming potential creativity into creativity based on regular activity analysis, supplemented it and said that creativity develops through analysis and copying, and creativity based on analysis leads to real creativity.

### CONCLUSION

Thus, innovation is the end result of an innovative activity, embodied in the form of a new or improved product introduced to the market, a new or improved technological process used in practice, or in a new approach to social services.

Innovation is a consequence of innovative activity. The specific content of innovation is change. The main function of innovation is the function of change.

The most effective methods in modern educational technology are: problem-based learning methods (problem presentation, heuristic and research methods), group methods (brainstorming, situational method, group discussion, game methods), project method, modeling method, laboratory experiment, involvement of students in productive work during practice, etc.

At the same time, the student does not receive ready-made knowledge, but extracts them; moreover, knowledge as such is not the goal of education, but becomes a means of solving the tasks set. The result of such training is not only new knowledge, but also the ability to apply it to solve problems. Active educational, cognitive and research activity of a student contributes to the development of his personal qualities - abilities, responsibility, independence, etc. In the process of joint activity in a group, his communication skills, the ability to listen, ask questions, express his opinion, lead a discussion, convince others, respect someone else's opinion, cooperate with people. Individual students also develop leadership qualities.

In integrative learning technology, it is also necessary to provide for the use of electronic (computer) means. In e-learning, in addition to traditional learning tools, a number of new tools are used in conjunction with computers, namely: electronic editions of textbooks and teaching aids, information and reference electronic publications, publications of a general cultural nature, Internet tools, virtual laboratories, etc. All these tools can be grouped under the name "computer learning systems". Electronic publications, first of all, perform those functions that cannot be performed by a book (for example, managing the educational and cognitive activities of students, automated control of their knowledge, etc.).

## REFERENCES

1. Айматова Ф.Х. "Метод графического органайзера в высшей математике". Academic Research in Educational Sciences. (Volume 3 | Issue 4 | 2022): 107-111 p.
2. Рузматова Н.Т., Айматова Ф.Х. Организация самостоятельной работы студента. // Журнал. Наука и образования сегодня. Москва №4(51) 2020.
3. Айматова Ф.Х. Особенности применения кватернионов к геометрическим задачам// Проблемы педагогики. 2021, т-7,-58. С -64.
4. Жамалова Г.Г., Айматова Ф.Х. " Роль общественно-гуманитарных наук в воспитании молодежи в духе патриотизма". Экономика и социум №4(95) апрель 2022).
5. Agarkov S.A. Kuznetsova E.S. Gryaznova M.O. Innovation management and state innovation policy. - М.: Academ. natural sciences, 2011. - 345 p.
6. Aleksanina, N.S. Innovative activity in education // The world of education - education in the world. - 2006. - No. 4. - P. 119-124.
7. Volynkin V.I. Methodology and methodology of psychological and pedagogical research. - St. Petersburg: Publishing House of St. Petersburg University, 2007.-152
8. Denisenko V.A. Innovative development of modern science of education // Innovations in education. - 2006. - No. 3. - S. 5-11.
9. Elizarova L.E. Innovative culture of personality and society: the essence and conditions of formation // Innovations in education. - 2006. - No. 3. - S. 74-83.
10. Lazarev V.S., Martirosyan B.P. Pedagogical innovation: object, subject and basic concepts // Innovations in education. - 2003. - No. 2. - S. 3-5.
11. Prigogine A.I. Innovations: incentives and obstacles: social problems of innovation. - М.: Politizdat, 1989. - 271 p.
12. Rogers E. Communication in organizations. - М.: Economics, 1980. - 451 p.

13. Samokhin V.F. Pedagogical innovations in the system of vocational education // Innovations in education. - 2006. - No. 5. - P. 4-10. p.
14. Slastenin V.A., Isaev I.F., Shiyarov E.N. Pedagogy. - M.: Academy, 2004. - 576 p.
15. Fatkhutdinov R. Innovation management. - St. Petersburg: Peter, 2008. - 448 p.
16. Khutorskoy A.V. Pedagogical innovation: methodology, theory, practice. - M.: UNC DO, 2005. - 222 p.

