

INNOVATIVE EDUCATION AND MATHEMATICS TEACHING METHODS

G'ofurova Mavjuda Aliyevna

Kokand State Pedagogical Institute

Yoqubov Temurbek G'ulomjon o'g'li

Student at Kokand State Pedagogical Institute

Abstract: Types of innovative educational technologies and their application in mathematics. It is discussed about the use in sciences.

Keywords: Innovation, innovation, innovator, innovative education, educational innovations, mathematics teaching methodology, new methods.

Lexically, the concept of "Innovation" when translated from English ("innovation") means "innovation". The concept of " **innovation** " in content expresses a specific state. Innovation is an activity aimed at changing the internal structure of a particular system.

According to the "National Encyclopedia of Uzbekistan", innovation has the following content and concepts: "Innovation (English "innovations" - introduced innovation, invention) - 1) funds spent on the economy to ensure the replacement of generations of technology and technology; 2) innovations in such areas as technology, management and labor organization, based on scientific and technical achievements and advanced practices, as well as their application in various industries and spheres of activity"

According to AI Prigozhin, innovation should be understood as a purposeful new approach to the relationship with a certain social unit - organization, population, society, group, enriching this relationship with more or less stable elements. In this context, it is understood that the author's views directly express the essence of social relations, an innovative approach to them. Based on this, each person, as a citizen, specialist, leader, employee, and also a participant in the process of various social relations, forms his own innovative activity.

Innovative education (from the English "innovative" - innovation, invention) is education that creates the opportunity for the learner to create new ideas, norms, rules, and to form qualities and skills related to the natural acceptance of advanced ideas, norms, and rules created by other people.

Technologies used in the process of innovative education are called innovative educational technologies or educational innovations.

I think that using innovative teaching in mathematics lessons is effective. The reason is that it is convenient for the student to introduce innovations, that is, to use inventive methods, to study theories and scientific ideas expressed by mathematicians. The types of innovative teaching technologies are as follows:

Problem-based learning is based on the creation of various problem situations in educational activities that should activate the independence of students. As a result, analytical and creative abilities and skills are developed.

Multi-level training helps the teacher to help weak students and focus on their strengths. This method makes more capable students want to develop further in their education, while the remaining students achieve academic success, which increases their motivation to learn.

Project-based teaching methods develop the creative potential of schoolchildren, forcing them to consciously determine their professional and social destiny. Research methods of teaching allow students to independently study problems that interest them and propose ways to solve them.

The essence of group teaching is that when teaching a new subject, it is not based on the requirements of the curriculum, but on the student's capabilities. Psychological and pedagogical diagnostics of the individual are widely used in group classes.

In the upper grades, a lecture and credit system is used. This allows schoolchildren to prepare for university studies. The essence of this system is to provide knowledge in one block, the management of which is carried out depending on the initial preparation of students.

The innovative portfolio assessment system is based on the formation of a personal account of a student's success as a means of determining the direction of individual development.

Information and communication technologies are the unlimited enrichment of knowledge through the use of computers and the Internet. The introduction of new methods and technologies into the education system does not mean the abolition of traditional teaching methods at all. Innovation is an integral part of the entire educational process

Educational innovations are forms, methods, and technologies that are used to solve an existing problem in the field of education or the learning process based on a new approach and can guarantee a more effective result than before.

Educational innovations are also called “innovative education”. The concept of “innovative education” was first used in 1979 at the “Club of Rome”. From geography, we know that the first city appeared in Rome. From physical education, we learned that the Olympic Games also appeared in Rome. Using such methods of teaching interdisciplinary integration also helps to further enhance the thinking of the listener, and the student is not limited to one subject.

Innovations take many forms. The following are the main forms of innovation:

- new ideas;
- specific goals aimed at changing the system or direction of activity;
- unconventional approaches;
- unusual initiatives;

- advanced working methods

The goal of implementing innovations in the education system or in educational activities is to obtain the highest possible result from the money and effort spent.

The main types are: by direction of activity, by description of the changes introduced, by scope of changes, by source of origin. Innovations used in the pedagogical process. Innovations used in the management of the education system.

Radical innovation

Modified innovations

Combined innovations

Network (local) innovations

System innovation

Module innovations

Innovative, created directly by the team

Modified innovations

The difference between innovation and any other novelty is that it must have a variable mechanism that allows for management and control. As in all areas, in education, there is talk of "novation", "innovation" and activities that express their essence.

If the activity is short-term, has the character of a holistic system, and serves only to change some elements in the system, it is called innovation (renewal). An example of this is the topic of forecasting, which is taught in geography lessons in grade 10. This is because there are several types of forecasting: they are divided into short-term, medium-term, long-term, etc.

If the activity is carried out on the basis of a certain conceptual approach, and its result serves the development of a certain system or its fundamental change, it is called innovation. In this case, it is directly related to field practice. Because field practice, together with observation, necessarily creates concepts or theories that serve the development of a certain conceptual system.

In scientific literature, special attention is paid to the distinction between the concepts of "novation" (renewal, novelty) and "innovation" (introduction of new things).

For example, VI Zagvyazinsky recognizes that the concept of "new", "innovation" denotes not only a specific idea, but also approaches, methods and technologies that have not yet been used in practice. However, in this case, the elements of the process consist of integral or separately taken elements, reflecting the ideas of effectively solving educational and upbringing tasks in changing conditions and situations.

Indeed, innovation is considered a tool, which in most cases manifests itself in the form of a new method, methodology, technology, etc. In essence, there are certain differences between innovation and novation. They are as follows:

Main differences	
Innovation	Innovation
1) theory in action is applied within; 2) scope and time is limited by; 3) methods updated; 4) the result is the previous system improves	1) is systematic, holistic and continuous; 2) new activity in a known practice designs the system; 3) the activities of the entities are complete updated; 4) new technologies are created; 5) to new qualitative results in activities achieved; 6) the practice itself is also updated

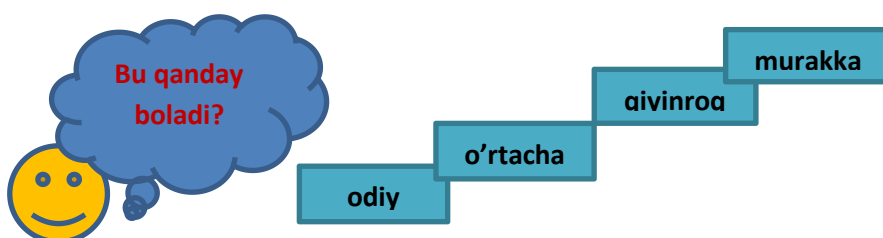
Now let's focus on the methodologies used in lessons to improve the quality of lessons.

method comes from the Greek word "method" meaning "way".

Currently, all teachers use certain methods and methodologies to deliver lessons to students. Let us explain what methods we use in teaching mathematics.

First of all, let's stop at the meaning of this subject. Since mathematics is derived from a Greek word and means "knowledge of sciences, understanding of the world," we, as mathematics teachers, must spare no effort to help students understand sciences and the world on a large scale.

In the meantime, let's demonstrate a new method.



Note. This method is mainly suitable for mathematics lessons for grades 5-6. Through this method, it is possible to increase the student's imagination both for the lesson and for life. If we can show the student in what areas of life we are learning and teach him how this subject can help him, we will have fulfilled our task. Through this method, we should teach that our life also gradually changes from simple to difficult, from average to difficult, and from difficult to complex, and that knowledge in higher grades builds on knowledge in lower grades.

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