

## **Methodology of Using New Pedagogical Technology in Teaching the Fundamentals of Projection**

**Sharofat Umedullaevna Sobirova, senior teacher**

**Akmal Shavkatovich Aminov, associate professor**

**Shodijon Shokirovich Baqoev, associate professor**

Bukhara State University

**Annotation.** New pedagogical technology is the expectation of a high level of pedagogical effectiveness through the analysis, selection, design and control of all managed organizational units and their interrelationships, as well as the introduction of a systematic approach to this issue. Today, the scientific potential of pedagogical specialists in our country is enough to reveal the essence of pedagogical technology. It is also not acceptable to consider pedagogical technology as a separate branch of pedagogical science or as a field of education aimed only at optimizing educational practice. Pedagogical technology reflects the activities within the framework of combining theoretical and practical research in this area.

**Keywords:** pedagogical technology, lesson, student, teacher, technology theory, purpose, science, school, drawing,

The main and topical issue today is to expand the scope of the introduction of pedagogical and information technologies in the educational process, the application of best practices in this area, the development and implementation of specific guidelines in this area in each subject. It would be expedient to provide textbooks, manuals and programs, lectures, texts on electronic media (diskettes, CDs, flash drives) and to provide each student with them. The most important task in scientific and methodological work is to develop the widespread introduction of new information technologies in the educational process, to provide them with the media, to connect them to communication networks.

Since the future of a great country cannot be imagined without technology, it is necessary to increase students' interest in this subject in one-hour drawing lessons a week, to deepen their knowledge of the basics of technical graphics, to develop skills. Accordingly, in the 45-

minute lesson, the assessment of many students is much more difficult to explain, check, analyze new and past topics, practical work, graphic work.

New pedagogical technology provides an opportunity to find a solution to this complexity. If the lesson uses a variety of interactive games and brainstorming methods, the elements of pedagogical technology are put into practice, the quality and effectiveness of the lesson will increase and the goal will be achieved. As a result, the rating of students and teachers will increase. The "Travel" game method can be used in each new topic statement or in the course of generalization lessons. This game encourages students to memorize technical terms, especially the words related to the subject of drawing - technical terms. For example, one student remembers, repeats and says the terms "Projection", the second student "Projection, shadow", and the third student "Projection, shadow, frontal". In this process, the swimmer must listen carefully to his friend before saying a word, because the previously said term should not be repeated, otherwise he will lose the game. Through this game, the teacher quickly identifies the abilities of several students. Pupils' intelligence, memory and memory are sharpened.

The "Quick Questions" game should contain a short question and a one-word answer. The student pays close attention and gives a short answer. What is an example projection? - shadow or trace. How many projection methods? - three and so on. 15-20 such questions will be formed. In a short time, playing this game will give points to most students. After that, those who did not actively participate in the "Travel" and "Quick Questions" games will be involved in the "test" and "domino" games. Two students will be given a crossword puzzle. Then the students are explained the essence of the game "Standard". According to this game, one or two words are chosen according to the topic of the lesson. For example, you need to create new words using the letters "geometric", "perpendicular". In this process, the student who writes the most words in 2-3 minutes wins. The teacher determines the answer of the student who took part in "dominoes", "tests". In the "Standard" game, the students who have the most and the most correct words are evaluated. Participants in the "Crossword" game will also receive points.

There is also enough time for the student to draw practical drawings. The effective use of this time depends on the ability of the teacher.

Through the game "Standard" the student goes on an intellectual journey to all disciplines, that is, applies. Makes words about place names, objects, teaching aids and so on. These words do

not include words belonging to another language or meaningless. As a result, for 45 minutes, the student participates in all games, pays attention, works, listens, repeats, speaks. As a result, the student acquires new knowledge during the lesson.

The use of visual aids in the course of the lesson will increase the effectiveness of the lesson. This can be done as follows. For example, using the exhibitions prepared for the games "Quick Question", "Travel", students develop new knowledge and skills. Of course, the crossword puzzle will be a long word on this topic or science.

The above-mentioned interactive methods used in the teaching process of drawing allow to cultivate in the minds of students such feelings as love for the Fatherland, confidence in the future, passion for ingenuity, clarity in life. In short, the knowledge and skills acquired by the student form the basis for the formation of a participant in this subject Olympiad, and later as a creative, talented student and inventor.

Repetition of drawing - generalization lessons are held after the study of a topic or section and at the end of the course. In addition, such a lesson can be used after studying large sections of the drawing course (for example, the basics of projection, cuts, shears, detachable and inseparable briquettes, assembly drawings). Generalization and repetition of knowledge should not take up all the time of the lesson. In this case, it can be very useful to complete special assignments with students in the same class that require them to recall previously acquired knowledge.

The purpose of the knowledge and skills tests is to determine the level of awareness of each student and to strengthen their knowledge of graphics in order to assess the level of preparation of each student in graphics.

Assessment in a knowledge lesson, in turn, allows you to identify timely measures to improve the level of knowledge of students. Checking helps to systematize and consolidate students' knowledge. Thus, the work of knowledge testing always serves to improve knowledge. The peculiarity of drawing lessons is that in each lesson and throughout the school year, each student can be systematically observed and their knowledge assessed.

In addition, in some classes, the organization of peer review of students' work is very useful, it simplifies the work of students. Such lessons include the organization of independent work, instruction on their implementation, individual work with individual students according to a pre-established plan.

The mixed-lesson lesson only involves explaining the material, repeating what has been said, asking students about the topic, and doing practical work on drawing parts of the building.

Each time a student prepares for a lesson and determines its type structure, he or she must remember that the lesson is first and foremost part of the learning process.

Since the importance of the learning process is not the same, it cannot be the same in the syllabus or in the structure of all the lessons on this topic. In some classes, most of the time is spent on teacher interviews, in others on practical work, and so on. Careful consideration of the structure of the lesson allows the teacher to imagine the course of the lesson and to listen to the issues addressed to the students.

Methods of teaching drawing:

The methods of teaching drawing are very complex, and there is no consensus on its definition and many issues.

Learning methods are defined as ways in which teachers and students work together to help students acquire knowledge, skills, and attitudes, form their worldviews, and then develop the ability to acquire and apply knowledge independently and positively. .

It is clear from the tariff that the method applies to the activities of both teachers and students. The description emphasizes various aspects of the method, the teacher's method of teaching, the ways in which students acquire this knowledge, and finally the development of mental abilities. In order to distinguish this or that method of teaching, it is necessary to take into account at least two important features. First, the teaching method must ensure the implementation of some learning task (close didactic goal) (to impart knowledge to students only, to improve or test them). Second, in order for education to achieve its didactic purpose, there must be a two-pronged approach to teaching. If the presentation of teaching aids related to the teacher's activities is viewed from the point of view of the above, the teacher's oral presentation or demonstration of technical details, posters, models, etc., is an interview. can be considered as a method. Because it is useless to show things in drawing lessons without a live speech of the teacher.

In the learning process, the teacher leads students from ignorance to knowledge. She shares her knowledge with students, demonstrates a variety of subjects, tutorials or work methods, conducts interviews, teaches how to work with books, organizes and conducts independent work of students. Students understand the teacher's explanation, participate in conversations, observe, read textbooks, and use reference books.

The concept of "teaching methods" is often confused with "teaching methods". But this is certainly not the same phenomenon in the pedagogical process. That is why it is necessary to be able to differentiate these concepts. Teaching methods consist of some elements, which are called methodological methods.

Methodological methods or teaching methods are an integral part of the method or individual action. The methodical method alone does not lead to the completed didactic result, therefore it is of auxiliary importance.

The components of the method can be further divided into more complex elements. For example, when displaying an object, it is possible to distinguish its location in space, its placement and rotation.

It is clear that despite the fact that the methods are complex and extremely complex, in any case they remain an integral part of the method, and it is of ancillary importance.

Based on the theoretical, organizational and experience of advanced teachers of the research conducted in recent years, the following methods of teaching drawing can be shown:

1. *Demonstration of visual materials, oral presentation of knowledge, demonstration of graphic and practical methods of work;*
2. *Conducting interviews showing the methods of work;*
3. *Tracking;*
4. *modeling;*
5. *oral reading of the drawing;*
6. *create images;*
7. *Work with textbooks and reference books.*

In the process of teaching, methods and techniques appear in different combinations or in some cases as teaching methods. For example, A.D. argues that conversation is an independent method of teaching. Botvinnikov. If a teacher uses them from time to time during practical work to draw teachers' attention to a work process, to correct mistakes in the drawing, etc., the conversation will be reflected in the form of teaching methods that are part of the exercise method. The success of a school's drawing course depends to a large extent on the thorough study of the rules and methods of graphic representation in drawing, labor, and geometry. The teacher of drawing should take care to expand the scope of this knowledge, to scientifically substantiate them and to explain them to students in a methodical way.

The teacher should keep in mind that the success of graphic training, which is necessary for future education of students and active participation in the labor process in enterprises and construction of the country, depends on the level of mastery of these rules and their practical application.

In connection with the introduction of a systematic study of the rules and conditions adopted in drawing, it is necessary to at least briefly analyze the images, such as photography and drawing, and determine their difference from the drawing. In this regard, the teacher should briefly cover some issues of the history of the development of technical drawing and sketching, as it will allow to explain the topic in more detail and, of course, to increase the interest of students.

By analyzing pictures and images as methods of depicting objects in the plane, the teacher explains the process of visual perception in a way that is understandable to students, because it can be used to distinguish one method of depiction from another. The teacher explains that visual perception is formed when looking at any object, and on its basis it is possible to think about the size of the object, ie its length, width and height.

The teacher should present some examples of historical drawings, explaining the role of drawing as the main technical document. These pictures should be as large as possible. Figures 1 show examples of such images.

The teacher then explains that in ancient times, pictures were usually accompanied by descriptions so that builders could think about the dimensions and other details of the building.

Projection drawing is the basis of mechanical drawing. In projection drawing the practical method of representation of geometrical objects and their combinations is studied.

In descriptive geometry, two different projection methods are used: the central projection method and the parallel projection method. Central projections are also called cone projections. They are used in the perspective part of descriptive geometry. Parallel projections are also called cylindrical projections. They are used in the part of descriptive geometry that includes rectangular projections, axonometry, shadow theory, and projections defined by numbers. Parallel projections are divided into curved and right-angled projections. The central projection method is often used in the perspective part of descriptive geometry.

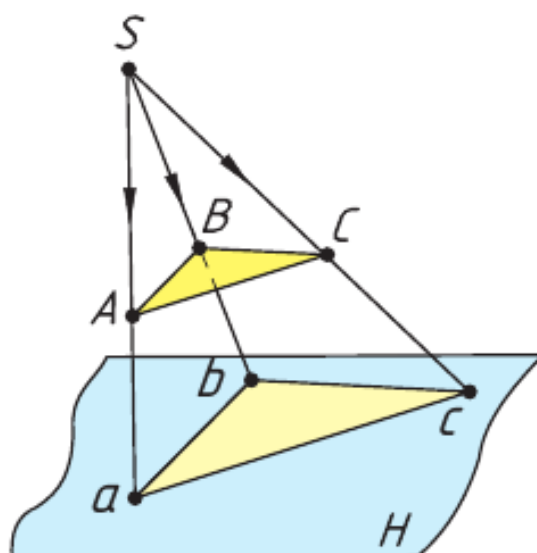


Figure 1

If the projection center  $S$  moves along a straight line, for example,  $MN$ , infinitely far from the plane  $H$ , then the projection straight lines  $SA$ ,  $SB$  and  $SC$  remain parallel to  $MN$  ( Figure 2). If we connect the points  $a$ ,  $b$  and  $c$  of these straight lines intersecting with the plane  $H$ , we get a triangle  $abc$ . This is a parallel projection of the given triangle  $ABC$ . Here the plane  $H$  is called the plane of projections, and the straight line  $MN$  is called the direction of projection.

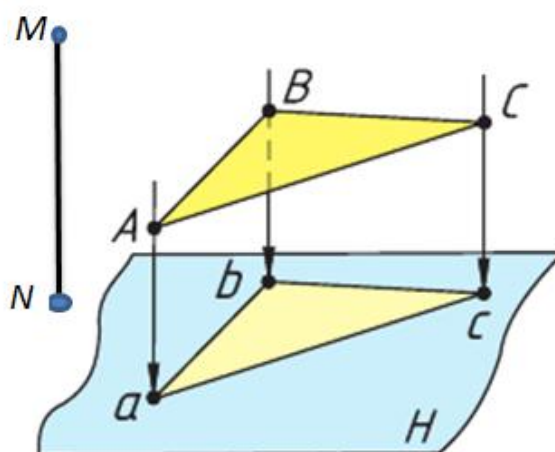


Figure 2

Even in parallel projections, any point has only one projection in the same plane.

Given the plane of projections and the direction of projection in parallel projections, any point can determine its projection in this plane, but the projection cannot determine the position of the point in space. This is because an infinite number of points can lie on a projection straight line, but their projections in the same plane are in the same place. Stages of implementation of the "T-scheme" method.

Instructor: Introduces a new topic and provides students with basic information about the scientific and theoretical foundations of pedagogical technologies;

- Based on the report, asks students to analyze their views on pedagogical technologies according to the following scheme;

Advantages of pedagogical technology

Conclusion

Disadvantage

- Asks to complete the task individually and spends 10 minutes;
- At the end of the day, students are asked to read their comments without explanation;
- After hearing all the conclusions, they are summarized and the final conclusion is formulated.

Tal aba: -Listens to the topic attentively;

Make a note of the information you need in your notebook goes;

Expresses his / her independent opinion on the concept on the basis of the given scheme;

Introduces those present to the final conclusion;

Stages of implementation of the "cluster" method.

**The teacher:** - Introduces students to a new topic;

He writes the word "game" on the board.

1. Write on a piece of paper what you caught. Just write them down without thinking about the quality of your opinion;
2. Ignore spelling or punctuation in your writing;
3. Do not stop writing until the end of the given act. If you can't think of an idea for a while, then start drawing something on a piece of paper. Continue this movement until a new idea is born;



4. Do not limit the quality of the set of new ideas and the relationship between them as much as possible within a certain concept.

**Student:** All accept concepts.

1. He writes on a piece of paper what he is married to;
2. Does not pay attention to spelling and grammatical features of inscriptions;
3. Continues to think until the end of the allotted time;
4. Attempts to shed light on a particular concept;

When the technology is complete, it is analyzed under the guidance of a teacher.

**Expected result:** Students get acquainted with the content, essence, tasks, types of gaming technologies.

### **Stages of implementation of the "Loyvda" method.**

**The teacher:** Explains ways to transfer technology and distributes handouts.

1. Invites students to divide into small groups.
2. Small springs on a specific topic are distributed to groups.
3. The group is encouraged to express their views in writing by consensus.
4. Activities are constantly monitored.
5. Access to the debate will be provided.
6. Students' defense will be organized.
7. The teacher analyzes the feedback, determines the outcome.

**Student:** Understands ways to transfer technology.

1. Divide into small groups.
2. Debate on the proposed topic.
3. The group agrees, at a certain point, to state the ideas analyzed in writing on a piece of paper.
4. Defend when the case is over.
5. Intergroup feedback is explored, and the result is reduced to ashes.

**Expected result:** Students learn to apply pedagogical technology in practice.

### **Stages of implementation of the "Insert" method.**

Teacher: -Introduces students to a new topic.

Gives them handouts with a brief description of the topic;

In the process of acquainting students with the text, using special symbols - "V" - familiar information; - "+" - new information "?" - this information is not clear to me;

Signs from the specified time are analyzed;

The final shape is formed.

**Student:** - Get acquainted with the text and express their knowledge, skills and abilities through special symbols;

He evaluates himself.

**Expected result:** Students will be introduced to a new topic, learn about the scientific and theoretical foundations of educational technology.

**Conclusion.** It would be expedient to make more use of interactive, reproductive and problem-based teaching methods in the selection of new pedagogical technologies and the development of its criteria.

The formation and development of didactic thinking takes place in the educational process. To achieve this goal, students are required to master the basics of science - knowledge, skills, abilities.

To provide the student with in-depth knowledge while working independently; independent reading; independent learning; free thinking; encouragement and training to work with available information.

Methodological bases of new pedagogical technologies are the state educational standards (templates). In the process of education, the main task should be to pay special attention to the basic knowledge of each subject, to develop them day by day and put them into practice.

Dialectical processing of educational content through the use of pedagogical technologies leads the student to perfection.

Definition and description of pedagogical practice processes for new pedagogical technologies; predetermining the tasks that the student will face in his future activities; The content of education should be defined at each stage of training.

Today, new information technologies, especially computer technology, are the main means of effective teaching. Therefore, it is necessary to develop a concept of complex teaching aids on the basis of new information technologies, and the use of new information technologies in the framework of this concept encourages the effectiveness of the educational process .

## LITERATURE

1. Qirg'izboev.Yu, Inog'omova.Z.L, Rixsiboev.T, Texnik chizmachilik kursi. - T., «O`qituvchi».1987.
2. Sh. Murodov, L.Hakimov, A.Xolmurzayev, M.Jumayev, A.To`xtayev . Chizma geometriya. - T., «IQTISOD-MOLIYA». 2006.
3. Mirdavidov M.M., Chizma geometriya va injenerlik grafikasi, Toshkent, «TDPU rizografi», 2000.
4. Аминов, Акмал Шавкатович, et al. "ПРОБЛЕМЫ ОРГАНИЗАЦИИ САМОСТОЯТЕЛЬНОЙ РАБОТЫ СТУДЕНТОВ В ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ." *European science* 2 (58) (2021): 77-79.
5. Собирова, Ш. У., Ядгаров, Н. Д., Мамурова, Д. И., & Шукуров, А. Р. (2021). ОСНОВЫ, ЦЕЛИ И ЗАДАЧИ ОБУЧЕНИЯ ИЗОБРАЗИТЕЛЬНОМУ ИСКУССТВУ. *European science*, (2 (58)), 62-65.
6. Мамурова Д. И. и др. УЧЕБНАЯ ДЕЯТЕЛЬНОСТЬ СТУДЕНТОВ ПО РЕШЕНИЮ РАЗЛИЧНЫХ ДИДАКТИЧЕСКИХ ЗАДАЧ В РАЗВИТИИ ПРОСТРАНСТВЕННОГО ВООБРАЖЕНИЯ СТУДЕНТОВ //European science. – 2021. – №. 2 (58). – С. 29-31.
7. Djalolovich, Y. N., Kodirovich, M. D., Ruziboevich, S. A., & Islomovna, M. D. (2021). IMPROVING THE PROFESSIONAL TRAINING OF FINE ART TEACHERS. *European science*, (2 (58)), 44-46.
8. Шукуров, А. Р., Ядгаров, Н. Д., Маматов, Д. К., & Аминов, А. Ш. (2021). МЕТОДИКА ИСПОЛЬЗОВАНИЯ КОМПЬЮТЕРНЫХ ПРОГРАММ НА УРОКАХ РИСОВАНИЯ В СРЕДНЕЙ ШКОЛЕ. *European science*, (2 (58)), 47-50.