

The Application of Best Pedagogical Experience and Interactive Methods in Teaching Natural Sciences in Courses of Professional Development - A Factor of Improving Lesson Quality

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Abstract: *It helps to improve the professional skills of teachers of secondary schools and the development of their creative thinking, exactingness, enrichment of knowledge. Instructions are given for organizing productive lessons through the use of pedagogical technologies and methods in the lessons.*

Keywords: Pedagogical requirements, education, student's ability, pedagogical ability, pedagogical skills in advanced training, pedagogical technology.

I. INTRODUCTION

The dynamics of the development of the effectiveness of the quality of education has intensified in relation to the constructive work carried out in the field of education in accordance with national programs, and the positive changes achieved. To date, the rational use of the created conditions and opportunities remains an urgent task.

Based on their priority tasks defined in the decrees and decisions of the President of the Republic of Uzbekistan, it implies improving the content of the process of professional development of subject teachers based on modern requirements and increasing their professional competence. These tasks are developed on the basis of a study of the requirements and needs of students and imply an increase in the efficiency and quality of teaching subjects.

II. MATERIAL AND METHODS

State policy of the Republic of Uzbekistan in the field of education and upbringing, professional competence and skill of the teacher, the ability to rationally use ICT in teaching, as well as theory, teaching methods, international programs for assessing student knowledge and innovative technologies, STEAM approach in secondary education, methodology for conducting practical and laboratory classes, the nationally practical curriculum and normative documents relating to the subject, incorporate modern methods of organizing the educational process to work with complex topics and are aimed at the formation of new knowledge, skills and abilities. To solve these problems in our country, physically and spiritually mature, comprehensively harmoniously developed, independently thinking, intellectually potential, with deep knowledge and a modern worldview. In the implementation of these tasks, the younger generation, physically and spiritually mature, harmonious and developed in all intellectual potential, deep knowledge and a modern worldview, capable of taking responsibility for the fate and future of our country. In order to consistently continue the task of education into adulthood, the implementation of large-scale comprehensive measures aimed at a specific goal, strengthening the support and assistance provided by society, creating conditions that meet modern requirements in responsible institutions for these processes, and their development. Extensive study and implementation of advanced foreign experience in raising a healthy child. The successful solution of the complex problems of modern education and upbringing of young people is decisive for the skill, artistic talent and culture of the teacher, worldview beliefs, profession and depends on their level. A teacher with strong moral convictions and a high pedagogical culture constantly takes care of improving and enriching his knowledge and professional skills. At present, increasing the efficiency of the educational process through the practical application of innovative technologies in the education system is one of the most pressing issues. When teaching physics, as in all subjects, it is considered acceptable to take into account the individual characteristics and capabilities of the student, the use of various pedagogical technologies in teaching physics, and the organization of lessons in accordance with the requirements of the DTS. The teacher, in order to ensure a deep knowledge of the content of each subject in the process of teaching science, will definitely improve the quality of knowledge given to students and lead to effective results through the effective use of the laws of modern pedagogical technology. The main goal of lesson planning is to achieve a theoretical explanation of the content of the topic. The teacher comprehensively considers what connections exist between the main concepts and the logical basis of the topic with other topics. Relying on pedagogical technologies and innovative striving, the use of various interactive methods aimed at increasing the activity of students helps to effectively achieve educational goals in learning. There are many types of interactive lessons, it is necessary to take into account the properties and goals of the topic of the lesson when choosing them and prepare. To do this, it is necessary to choose the right means of the lesson and clearly define the tasks of the students of the lesson.

At present, the following interactive methods are used in the organization of modern lessons: "Question-answer", "Cluster", "Insert", "ZHU", "Eureka", "Work in small groups", "FSMU", "Debate", "Work in pairs", "Role-playing games", "Case study". Every teacher knows that the lesson is the main form of the educational process. Therefore, the teacher constantly thinks about conducting a lesson, improving. To achieve high efficiency, it is advisable to use non-traditional teaching methods in the lessons,

i.e. various methods of modern pedagogical technologies based on foreign experiences, based on the topics of the lessons. I want to show how to use the following methods of "FSMU" and "Case Study" in the organization of a modern physics lesson.

FSMU method

This method can be used at the stage of explaining and reinforcing a new topic. When using this method on a topic, students are given the following words:

Opinion -

Reason -

Example -

Generalization -

and based on this topic, each student gives his opinion, the reason for his opinion, it is required to give examples of this topic from everyday life and explain them. Then all opinions, reasons and examples are summarized. At the stage of fixing a new topic, the listeners (students) are divided into small groups and the teacher distributes posters on which the four stages of the FSMU technology are written.

- In small groups, each student's notes are discussed and summarized and transferred to a poster.

- The teacher asks to explain the notes made in groups.

- The lesson ends with a generalization of the teacher's put forward opinions on the problem.

Technology challenge. This technology can be studied when performing controversial issues, on the basis of textbooks and curricula of some topics of the previous sections, in some sections, practical measurement work was carried out and conclusions were drawn. Therefore, this technology helps listeners or students to express their opinions, think freely and convey their opinions to others, openly argue, and at the same time develop the knowledge gained by the audience in the educational process.

Purpose of technology - this technology helps listeners (or students) clearly and concisely state their arguments and opinions on a simple sheet of paper that is handed out.

Sample handouts:

Topic: We will consider the topic "Diffusion". Express your opinion on the topic.

O- express your opinion

R - justify your opinion

E - Give an example to support your stated reason

G - Summarize your opinion

Opinion: Spontaneous mixing of molecules with each other is a phenomenon of diffusion.

Reason: It occurs as a result of the continuous and uneven movement of molecules. As the temperature rises, the diffusion rate increases. Diffusion in gases is fast. If it is in solids, it moves very slowly. The reason is that the molecules of solids are densely packed.

Example: The smell of perfume spreads quickly. The smell of food, the formation of sugar tea, pickling vegetables.

Generalization: The phenomenon of diffusion is the spontaneous mixing of molecules. Buhodis appears as a result of the continuous and uneven movement of molecules. Diffusion depends on temperature. As the temperature rises, the diffusion rate increases. Thus, the diffusion process proceeds faster in gases, slower in liquids, and very slowly in solids.

The theme is "Strength".

Opinion: Moves bodies and picks up speed.

Reason: It occurs as a result of the interaction of at least two bodies.

Example: As long as there is power, there is the universe. Birds can fly, ships can sail on water. The plane can fly despite its weight in the air.

Generalization: Force arises as a result of the interaction of bodies. Force moves objects. Objects gain speed due to movement. As a result of changing its speed, it acquires acceleration. As long as there is strength, there is peace, there is development. We move under the influence of force.

Case study method

"Case study" is a word taken from the English language (case-specific situation, research-research, analysis. This method is an educational method based on the study and analysis of a specific situation and the achievement of socially significant results.

Work on the method of "case study" is carried out as follows.

1. Work individually (30% of the total time), get to know the situation (through a lecture or through a film, audio and video materials), identify problems, study the real situation and make a decision.

2. Work in groups (50% of the total time). Identification of problems according to their degree of importance, development of methods for solving them, determination of effective and ineffective aspects of each solution, summing up and evaluating the conclusion.

3. Individual and group work (20% of the total time)

• substantiation of the possibility of using options.

• preparation of reports and presentations of results.

The main issue at the stage of the case is to determine whether the crown is made of pure gold without breaking it.

Ways to solve a problem situation.

1. Let's get acquainted with the case and its information support. First, let's get acquainted with the case-stage. We will carefully read the information provided to determine the problem that needs to be solved. Determine the level of problem solving. The teacher's culture is considered his highest virtue. If there is skill, then it will raise him to the level of a professional.

2. Let's get acquainted with this situation.

- the situation is the issue of the crown, the issue of determining its density based on the size and the above data.

3. Analysis of the problem situation.

Let's try to analyze the problem situation.

Let us determine the physical quantities that need to be measured to solve the problem.

1. mass,

2. determination of mass,

3. volume,

4. determining the size of the crown,

5. density,

6. Density comparison of real gold and crown.

In this situation, all possible solutions of the measured quantity are found. The causes of a problem situation, the way out of the situation without breaking the crown, determine whether it is made of pure gold. The disbelief of the king in the master, Archimedes, determining the volume of the crown of a very complex shape, the king, giving Archimedes a task, Archimedes, determining the volume of the crown, dividing the mass of the crown by its volume, determining the density of the crown and comparing its density with the density of gold.

III. RESULTS

Archimedes knew the homogeneity of a body and a way to compare its density in relation to its mass to volume. The main problem lies in determining the size of a crown of complex shape. The problem of determining the size before the time given to Archimedes was difficult. He could not find a way to determine the size of the crown. But the problem of finding the volume after finding out that objects displace a volume of liquid equal to their volume when immersed in water has been solved.

- Determine the size of the crown by immersing it in water.

- Determining the mass of the crown with the help of scales.

- Determining the mass of the crown by dividing it by the volume.

- Determines the size of pure gold using water.

- Determines the mass of pure gold using scales.

- Determines its density by dividing the mass of pure gold by its volume.

Explanation of the topic "Archimedes and the legend of the golden crown" using the case study method.

Topic: The main goal of the case method "Archimedes and the legend of the golden crown."

Using the legend of Archimedes, teach students the concepts of mass, volume, and density and learn how to define them.

Expected results in the educational process.

• assimilates the concepts of mass, volume, density.

• studies methods for determining body weight, volume and density.

• identification of the problem and search for a solution to the problem.

In order to successfully implement this business, students must first of all have the following knowledge and skills.

The student must know.

Measurement of mass, determination of volume in a simple way.

The student can.

- study the subject on your own.

- to define a problem situation.

- independently work with this information on the topic.

- compare, analyze and generalize the results obtained.

IV. CONCLUSION

Today, there is growing attention to the use of interactive methods, innovative technologies, pedagogical and information technologies in the learning process. Modern technologies teach students self-reliant search, learning, knowledge analysis and even inference. Therefore, in the implementation of these requirements, each teacher must constantly improve his pedagogical skills, for this, first of all, it is necessary to choose the right pedagogical technologies.

Most importantly, the teacher can use the acquired knowledge in the learning process with high pedagogical skill. It is necessary to come to the conclusion that it is advisable to use some kind of pedagogical technology and not leave aside the formation of unique teaching methods that are still used and achieve high results in such educational institutions. Through the use of modern pedagogical technologies and innovations in the classroom, conditions are created for the teacher to become a real educational service. The teacher not only teaches the student, but also guides the student in organizing his knowledge, teaching the student

information that is difficult to assimilate. The goal of the teacher is to constantly improve the quality and educational level of the acquired competencies of students by choosing the right methods in a convenient and simple way and using them effectively in practice.

REFERENCES

1. Ishmukhammedov R. Innovative technologies in education - T: - Publishing house of science and technology. 2010.
2. Ishmukhammedov R. Innovations in education. - T: - Publishing house of science and technology. 2010.
3. Yoldoshev Zh., Gasanov S. Pedagogical technologies. - T: - Financial and economic publishing house. 2009.
4. Mirzakhmedov B.G. Ofurov N. et al. Theory and methods of teaching physics Toshkent-2010
5. Yuldoshev Yu.G., Usmanov S.A. Modern Pedagogy. implementation of technologies in practice Tashkent-2008.