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TEACHING NATURAL SCIENCES USING STEAM TECHNOLOGIES IN THE PROCESS OF PROFESSIONAL DEVELOPMENT

Abstract: This article presents ideas and opinions on the creation of methodological opportunities using steam technologies in the teaching of natural sciences in the process of professional development.

Key words: STEAM technology, natural science, Keys technology, FSMU method, Skrabey technology, work in small groups.

Annotatsiya: Ushbu maqolada malaka oshirish jarayonida tabiiy fanlarni o'qitishda steam texnologiyalaridan foydalangan holda uslubiy imkoniyatlar yaratish bo'yicha fikr va mulohazalar keltirilgan.

Kalit so'zlar: STEAM texnologiyasi, tabiiy fanlar, Keys texnologiyasi, FSMU usuli, Skrabey texnologiyasi, kichik guruhlarda ishlash.

Аннотация: В данной статье представлены идеи и мнения по созданию методических возможностей использования паровых технологий в преподавании естественных наук в процессе повышения квалификации.

Ключевые слова: STEAM-технология, естественные науки, технология Keys, метод FSMU, технология Skrabey, работа в малых группах.

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Many examples of effective organization and management of the educational process based on collaborative teaching can be given using Steam technologies in the teaching of natural sciences in the process of professional development. They are mainly used as interactive technologies. Each of the methods, technologies and strategies that are effectively organized on the basis of this cooperative education aims at certain goals and tasks in education, i.e. increasing activity, interest and motivation, forming communication skills, establishing reciprocal communication, cognitive processes. such as the development of certain functions.

It encourages students to strengthen, master, generalize the subject and express their imaginations on this subject in the form of a drawing with a creative approach. This helps students to determine the level of their knowledge, understanding and imagination.

The branching of ideas is organized as follows:

1. Any thought that comes to mind is written down in a row.

2. You need to continue writing until the specified time is up. If you run out of ideas, you should continue from another network until a new idea comes.

3. Try to increase the sequence, networks and interdependence of thoughts as much as possible. This method can be used individually, in a small group, or with a team.

Introduces problematic situations encountered in practical activities, teaches

how to be ready for them, how to solve them appropriately. It encourages comprehensive study of the problem, consideration from different positions, comparison, comparison, analysis, generalization, and conclusion.

Students should find the answer to these definitions by discussing with the group. For example, the definition of temperament types is given. Students should read each one and determine which one is typical of which temperament type. As an example, a variant from epidemiology is given.

This approach allows for in-depth teaching of primary education subjects. One of the unique possibilities of digital technologies is the availability of updating educational materials. Therefore, in recent times, the main attention is paid to the use of digital technologies in all types of education.

Starting from the 2023-2024 academic year, biology has been taught in primary classes. This educational subject plays an important role in the formation of students' computer literacy, skills in working with biology and the culture of using technical tools [3]. Therefore, in the process of teaching this subject, it would be appropriate to organize additional training for elementary school teachers on the skills of using digital technologies.

The use of digital technologies in the process of primary education is of great practical importance. The main ones of such importance are:

- 1) interest primary school students in learning;

2) preparation of educational materials for primary school students on the basis of various tools;

3) presentation of new methodological recommendations for the teacher's book of primary school teachers;

4) updating the teaching process in primary education;

5) introducing the experiences of foreign countries into the teaching process;

6) publicizing the individual experiences of skilled primary school teachers;

7) improving the quality of primary education based on digital technologies.

Therefore, it is important to use digital technologies in the process of primary education. For this, it is worth mentioning that it is important to do the following:

a) development of the technology of using digital technologies in primary education;

b) selection of effective digital technologies in primary education and presentation of its set for practice;

c) to develop the skills of future primary school teachers in using digital technologies;

d) improving the skills of primary school teachers in practical activities in the use of digital technologies in training centers.

This approach includes the mechanisms of using digital technologies in primary education.

Thus, the use of digital technologies in primary education renews the content of teaching, improves its means and enhances the learning process of students. For this, it is

appropriate to monitor the use of digital technologies in primary education in the process of higher pedagogical education. Because the secondary schools of our country are attached to higher pedagogical educational institutions in the regions. Such opportunities should be used wisely.

It is known that students are divided into different types according to the characteristics of information acquisition. Someone remembers well what they heard, someone sees well, and someone learns well what was done in practice through action. In this respect, the role-playing method actively engages all the learning characteristics of the student. In this, the student hears, sees, and practices the subject. When playing a role, the student feels his responsibility and tries to master the subject thoroughly in order to perform the role admirably. For this, students are divided into small groups and each of them is assigned to perform a certain role-based task. For example: one group should play the role of a doctor, and one group should play the role of a patient. First, other students, and then the pedagogue evaluates their work as an expert.

In conclusion, conducting classes using steam technologies in the process of qualification improvement is the fastest way to achieve the goal. It is appropriate to conduct classes based on the above methods.

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