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IMPROVING THE CONTENT OF THE SCHOOL CHEMISTRY TEXTBOOK BASED ON THE STEAM APPROACH FROM CHEMICAL EXERCISES

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Abstract. STEAM technology is one of the bright methods of today's modern education. Application of these technologies in various disciplines has been showing high results. This article analyzes theoretical data on the use of STEAM technology in chemistry classes.
Keywords: STEAM education, STEAM sciences, modeling, model component, fundamental sciences.

INTRODUCTION

If the word STEAM is spelled out:
S - science
T - technology
E - engineering
M - mathematics
It can be seen that mathematics is the basis of STEAM education technology.

Thus, it is important to use integrated education to explain the interdependence of the first and second cases in the practical application of theoretical knowledge, and from the implementation of this education, education and integration of STEAM subjects occurs.

MATERIALS AND METHODS

STEAM-educational system is one of the systems recognized all over the world. It has several advantages [2]:

1. To conduct education in an integrated manner, not by academic subjects, but by "topics"

STEAM-education combines interdisciplinary communication and design method, which is based on the integration of natural sciences with technology, engineering creativity and mathematics. In this, preparation for professions related to engineering is carried out.

2. Application of scientific and technical knowledge in real life

In STEAM education, the use of scientific and technical knowledge in real life is shown to children with the help of practical exercises. In each lesson, students develop, build, and develop models of modern industry. They study a specific project, and as a result, create a prototype of a real product.

3. Development of critical thinking skills and problem solving

The STEAM program develops the critical thinking and problem-solving skills that children need to overcome the challenges they face in their daily lives. For example, children assemble a model of a fast moving car, and then test it.

4. Increased feeling of self-confidence

Kids get closer to their goals each time they build bridges and operate model cars and airplanes.

After each test, they improve the model. In the end, they overcome all problems with their own strength and achieve their goal.

RESULTS AND DISCUSSION

Interactive methods that can be used in the teaching of chemistry and the method of using STEAM technology.

We will begin the description of this text with a narration that was told a long time ago. One day, a man who was hungry by the lake met a wise man who was catching fish and turned to him: "I am hungry, help me!" and after some time, you will be hungry again and you will ask me for help again. I can give you a fishing rod, but it might break at some point, and you'll have to come back to me. Well, I'll teach you how to make a fishing rod, it's long and hard, but you won't need my help later. Choose your own path..."

The conclusion from the above narration is that a good teacher should teach a student to "make a fishing rod" and a smart student should learn it.

The more quickly and firmly the students learn to "make a fishing rod", the more they will have their own "fish" without needing others. The results of many pedagogical experiments carried out by researchers in various educational institutions confirm that new interactive and non-traditional STEAM technologies are very useful in the implementation of such tasks. Therefore, it is very important for teachers working in educational institutions to know how to use innovative technologies in their field of training.

In conclusion, we can say that today's specialists, regardless of their sphere of activity, have a wide range of knowledge on new pedagogical technologies, modern computer technology, information communication and communication systems, technical tools and their use. should be. In particular, the role of practical training and laboratory equipment in the teaching of chemistry is incomparable, and new methods are available to the teacher in conducting these lessons.

Lessons conducted with new pedagogical technologies teach students to think independently, develop their speech, communicate with each other and even make their own conclusions, and at the same time help them to keep up with the times. The interactive teaching methods presented in the manual make chemistry lessons more interesting and encourage all students to actively participate during the lesson. A teacher who teaches with these methods achieves a high quality indicator in classes. In addition, it would be appropriate if not only didactic materials, but also information and communication technologies (ICT) were used in chemistry classes.

CONCLUSION

The implementation of the STEAM education approach in chemistry classes is becoming the main criterion of the innovative activity of engineering, the combination of fundamental and practical knowledge, modern technologies and, most importantly, their effective use for practical purposes. As a result, a new approach to engineering education is formed [1]. Learning the components of models and being able to use them correctly is an important place in the implementation of STEAM science education.

REFERENCES:

1. Ganiyeva, H. (2021). COMMUNICATIVE LANGUAGE TEACHING APPROACH IN EFL CONTEXT. Preschool education journal, 4 (Preschool education journal). Retrieved
2. Aliev A. (2021). About the features of the perspective of simple geometric shapes and problems in its training. ZbírniknaukovixprasSCIENTIA.
3. JabbarovR., & RasulovM. (2021). further formation of students' creative abilities by drawing landscapes in painting. ZbírniknaukovixprasLÓGOS.
4. Avazbayev A., Jorayev Y., & TursunkhojayevaZ. (2021). Usloviya organizatsii processa tekhnologicheskogo obrazovaniya na osnove kreditno-modulnoy siSTEAMy. Obshchestvo i innovation, 2(4/S),
5. Critical Review of STEAM (Science, Technology, Engineering, Arts, and Mathematics) Page 18 of 22 printed from the oxford research encyclopedia, education (oxfordre.com/education).