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INNOVATIVE APPROACH TO CHEMISTRY TEACHING

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ABSTRACT

A number of problems in the field of ecology, technology, food products and other areas of production will be solved in the future as a result of the upbringing of a generation that thoroughly studied the scientific foundations of chemistry and knowing it perfectly. This article describes the technology of using innovative methods in the study of chemistry.

INTRODUCTION

In almost all countries of the world, including in our country, where science, art, technology and industry are developing day after day, all subjects taught in secondary schools, especially natural sciences, are the basis of modern production and life. The process of teaching chemistry, which is the basis of our life, plays an important role in the use of new innovative technologies and advanced teaching methods in the lessons. In recent years, a number of developed countries, including the USA, Germany, China, Russia, Korea, Great Britain, India and Japan, have improved the teaching of chemistry in all natural sciences, combining theory and practice. The use of didactic games selected in accordance with the age and interests of students to organize classes in an interesting form and development of motivation [1].

MATERIALS AND METHODS

V.N. Verkhovsky, P.P. Lebedeva, L. M. Smorgonsky, J. L. Goldfarb, Yu. B. Khodakov, S. G. Shapovalenko, L. A. Svetkova, I. N. Chertkova, V. S. Polosina, V.P., Kiryushkina D.M., Shelinsky G.I., Pak M. S., Gabrielyan O. S. and other methodists developed the first set of educational materials, textbooks, notebooks and other didactic resources For use in the educational process.

Analyzing the process of studying the methodology of teaching chemistry in Uzbekistan, in recent years, Professor H.T. OMONOV made a significant contribution to the development of chemistry teaching methods. In addition, Uzbek scientists A. Mamazhonov, J. Fayzov, T. Gulboev, G. Bimimurodov, M. Umarov, A. Azimov, Sh. Kuvvatov, J. Mamazhonov, F. Alymov and L. Tyilobov have developed a number of scientific work on improving the improvement teaching chemistry those who conducted research.

RESULTS AND DISCUSSION

Digital era can be conceptualized in terms of information age within a period in human history characterized by the shift from traditional to industrial revolution. It is worth nothing that the definition of digital era continuous to change over time. In this context the concept of digital era refers to e-learning. Digital learning, therefore, refers to any type of learning that is facilitated by teaching or by instructional practice that make use of technology. Digital learning occurs in all learning areas or domains. According to Victoria (2017) it encompasses the application of a wide spectrum of practices which include:

- Blended and digital learning
- Game based learning
- Assessing digital context
- Collaborating locally and globally
- Assessing and reporting on time

Analyzing the aforementioned scientists and their research, we see that they explain the forms of chemistry training, methods that can be used in chemistry lessons, their value, and also give a number of valuable ideas to evaluate students' knowledge. However, there are a number of areas in which the teaching of chemistry has little studied, and it should be noted that this is [2]:

1. The psychological foundations of the chemistry learning process are not sufficiently analyzed and the necessary recommendations in this area are not developed. In order for the lesson to be effective, the teacher needs a deep understanding of students' psychology, which can positively affect the mood of the student, motivate him with positive emotions, increase curiosity, and also develop and use new ones in the lesson. .

2. Modern effective methods of identifying and replenishing gaps in the knowledge of students in chemistry have been little studied. Intellect map, quest, textual logical tasks, switch, etc. -improve modern technologies and tasks, such as "analysis", "keys -research".

In the lesson, graphic, tabular and picturesque images of exhibits and tasks used to explain the topic should be developed. This is because such types of tasks and exhibitions help to preserve the memory longer and better understand the topic. Analysis of the state of teaching chemistry in developed countries showed that they use Steam elements more in their lessons. When teaching children in this area, they are treated as adults, give tasks to prepare various projects and exhibitions, notebooks.

With independent preparation of the project and the exhibition, students' interest in the lesson increases, the process of creative thinking develops.

One of the most important methods proposed above is the “Intelligence Card” method. This method can be used both to explain the new topic and to consolidate the previous topic. In the middle of the map there is a “central concept”, from which primary networks are displayed that can explain the essence of the central concept, and, if necessary, secondary networks explaining the idea expressed in the primary network. This method uses as many different colors as possible for better focusing. To improve the appearance of this method, you can use various images and symbols. This method, very visual and aesthetically pleasant, is a creative design work, which in orderly places a sequence of concepts in the human mind.

CONCLUSION

The problem of using innovative methods for increasing the efficiency of chemistry lessons is widely studied by foreign and domestic teachers, and various achievements have been achieved in this direction. At the same time, the methods and technologies developed today need minor modification and improvement in order to adapt to modern requirements. Particular attention should be paid to the development of creative abilities of students and creative thinking.

This paper puts in place the following suggestions towards improving teaching and learning of chemistry in the digital era:

- Government should ensure that adequate facilities and internet resources are provided to improve teaching and learning chemistry.
- There is need for both government and private sectors to engage adequate qualified teachers who are willing to do the job.
- The present status of power supply is somehow encouraging; however, there is need to improve on the current situation by the government.
- Provision of e-learning resource is capital intensive; thus the government needs to prioritize provision of funds to enable schools used the digital technology effectively.

There is need for government to ensure that chemistry teachers are professionally trained and re-trained to improve their knowledge and skills in teaching.

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