

THE ROLE OF INNOVATIVE TECHNOLOGIES IN CHEMISTRY SCIENCE TEACHING

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Annotation

This article reveals the role of chemistry in our lives and the effectiveness of chemistry teaching by using innovative technologies in higher educational institutions, and in conclusion, that seems best to summarise the application by definite examples in the data.

Keywords: chemistry, innovative technologies, pedagogical technologies, Case -study method.

Chemistry is an essential basis for many aspects of our daily lives and it is a great source of opportunities for the future life in general. However, advances in chemistry have penetrated into all spheres of human life and ones have become an integral part of life. For example, there are many directions such as food products, medicine belonging to medical drugs, many modern chemistry-related products and technologies, and so on. Chemistry is closely related to biology, physics, medicine and ecological sciences. At the same time, the environmental ecological problems besides of producing waste-free and ecological pure productions, techniques and technologies, the problems of clean drinking water, also global problems in front of chemistry and their solutions are the basic characteristic attributes.

The role of the chemistry in our lives and the importance of solving actual problems in front of the humanity aims to note main goals of higher education to educate qualified, educated and advanced cadres training to solving the problems of chemistry. That is why, the latest advances in chemistry reflecting improved content and efficiency of researches which aimed at improving the students' learning in higher education are actual in general.

Undoubtedly, the use of innovative technologies in chemistry teaching has a positive effect. These include of problem-based education technology, multi-level educational technology, game learning technology, information and communication technologies, integrated learning technologies, project technologies, Case study method, Conceptions of analysis, Glossary training methods.

The topic below reveals the methodology of using Case Study technology in chemistry teaching.

TOPIC: ABOUT ECOLOGICAL PROBLEMS BELONGING TO CHEMICAL INDUSTRY AND THIER SOLUTION WAYS

The purpose of the given case:

To inform to students about the use of toxic chemical matters in national economy.

The expected results from educational activity:

The students understand how is it important to use waste-free technologies rationally.

One of the most important problems in front of the humankind is the protection of nature. There is clear-cut evidence that, Central Asia is one of the most dangerous areas on the ecological threat. The

essence of this danger is that, first of all, this situation, it was arisen as a result of almost a half-century of denying and ignoring the problem.

A Problem Situation

1. In the 21st century, there were global problems that concern mankind. The problem of damaged waste emissions from chemical industries, chemicalization of agriculture, the use of chemical fertilizers to raise the productivity and their harmful effects, increased productivity, hazardous wastewater from chemical complexes and their influence to flora and fauna in the surrounding, and the problem of pure water for humanity were also developed.

2. At the present time, more than 1 billion tons of industrial and household wastes are accumulated. What is new is that, in chemical industries of Almalyk district and Samarkand region, more than 60 million tons of phosphogyps were collected. Every year, about 30 million tons of domestic and municipal wastes, and about 20 million tons of wastes are generated in livestock complexes. They are the main sources of surface water pollution.

3. Chemicalization of agriculture, the unplanned using of various chemical fertilizers for the purpose of increasing productivity has caused serious negative ecological problems. As a result of not understanding the limits and application of fertilizers, the amount of toxic chemicals was used about 20-25 kg per one hectare and in some regions these matters were put until 40-45 kg and approximately 400-450 kg of mineral fertilizers were given to soil. Nowadays, farms use 1.3-1.4 million tons of mineral fertilizers and 80-85 thousand tons of pesticides per year in the republic.

4. In the composition of mineral fertilizers, such as phosphorite contains large amounts of fluoride and heavy metals. Toxic chemicals and mineral fertilizers have been uncontrolled used for about 20-25 years. Pesticides are widely used in agriculture, so they are used in plants against pests, the damaged matter influence the environment and pollutes soil and water.

5. 30-40% of the mineral fertilizers deposited in the soil are benefit for plant productivity and the rests of mineral fertilizers decompose the soil, as a result, soil fertility decreases year by year. In addition, there are serious errors in the transportation and storage of mineral fertilizers and pesticides.

1. Problem

To give recommendation for the development of safe ways to prevent environmental pollution at present time.

2. Tasks

1. To analyze the ecological problems.
2. To define the factors contributing to environmental pollution.
3. To analyze the sources of environmental pollution.
4. To analyze the current environmental situation.

3. Solution algorithm

1. To analyze ecological problems;
2. To define the problem of environmental emissions from chemical industries;

3. Chemicalization of agriculture, use of various chemical fertilizers for the purpose of increasing productivity and definition of its harmful effect;

4. To obtain information on harmful wastewater from chemical complexes and to determine their danger to the flora and fauna, and to develop comfortable measures for environmental safety;

5. To give recommendation on how to solve the problem of pure water for humanity.

To solve the problem of damaged gas emissions from chemical industries, it is necessary to introduce advanced waste-free technologies, which is the problem to create in our country. It is recommended to develop products that are useful for the national economy from various types of wastes, and also it is advisable to develop waste decontamination measures.

However, it is recommended that advanced biochemical and biotechnology technologies be used to neutralize harmful wastewater from chemical complexes. It is important to protect the environment, to neutralize the harmful substances that are released into the atmosphere.

At the end of the lesson, the teacher will reinforce the topic by asking various questions from students. Although the use of case study technology in chemistry classes provides a reliable foundation for students to learn new topics and to think independently. Equally importantly for a rising students' knowledge by applying of Analysis of concepts and Glossary training methods, these can be served effectively in chemistry teaching. These methods will give a opportunity to students to master effectively the chemistry.

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