

TEACHING THE COURSE OF SULPHURIC ACID PRODUCTION IN INDUSTRY WITH THE HELP OF PEDAGOGICAL TECHNOLOGIES

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Abstract:

There are several methods of teaching using pedagogical technologies in the production of sulfuric acid in industry. The benefits of using advanced teaching methods such as e-learning platforms, virtual reality simulations and interactive multimedia content to improve the learning experience and results for students and professionals were discussed.

Keywords: Chemical technology, pedagogical technologies, sulfuric acid, simulation, 3D model, multimedia, animations, group work, analytical skills.

Introduction

Traditional teaching methods such as lectures and textbooks may not be sufficient for a comprehensive understanding of the complex processes involved in industrial sulfuric acid production. This article aims to explore the possible benefits of incorporating pedagogical technology into the training of sulfuric acid production in industry.

Pedagogical technologies are used to increase students' interest in chemistry, experience, practical skills, analytical and critical thinking skills. Several pedagogical technologies are used in the training of sulfuric acid production. Practical training in the laboratory will help students learn to focus on the practical part of sulfuric acid production. The method of technical visualization uses 3D models, multimedia, animations and other visual tools. Group work units help students develop skills related to cooperation, communication and physical work. Problems and questions help students develop their knowledge of chemistry. Pedagogical technologies help in the development of scientific and experimental activities of students and in theoretical and practical study of chemical technology.

Pedagogical technologies are used to increase the effectiveness of training in the production of sulfuric acid in industry. These technologies include e-learning platforms, virtual reality simulations, interactive multimedia content, and others. Integrating these technologies into education has been shown to improve learning outcomes, increase student engagement, and deepen understanding of complex concepts.

There are several advantages of using pedagogical technology in mastering the topic of sulfuric acid production in industry. One of the main advantages is that it allows students to learn quickly. Another advantage of pedagogical technology is that it provides students with a more interesting and interactive activity. It helps to increase motivation and remember information.

Interactive simulations, for example, allow students to practice the manufacturing process in a safe and controlled environment.

Let's look at several pedagogical methods that can be used to teach sulfuric acid production.

➤ The first method is a hands-on laboratory where students can learn how to prepare sulfuric acid, collect materials, perform reactions, and evaluate results. In this, students develop their scientific skills and practices. They study the sulfuric acid production process, collect substances, carry out reactions and evaluate the results.

➤ The second method is the use of virtual simulation technology, students use 3D models, multimedia, animations and other visual tools. Students will be explained by reviewing and visualizing the process of sulfuric acid production. By making virtual simulations feel like a real production environment for students learning sulfuric acid production, virtual simulations help students gain a deeper understanding of the processes involved and develop practical skills in a safe and controlled environment. This hands-on approach leads to improved knowledge retention and better preparation for real-life applications.

➤ The third method is the use of interactive multimedia, interactive multimedia content such as animations and simulations help students visualize complex processes and concepts related to sulfuric acid production. This type of content can be especially helpful for students who struggle with traditional teaching methods because it allows them to engage with the material in a more dynamic and interactive way.

➤ The fourth method is E-learning platforms. E-learning platforms offer a flexible and convenient way for students and professionals to learn sulfuric acid production. These platforms can provide a range of multimedia content such as videos, animations and interactive quizzes to help learners understand manufacturing processes more effectively. In addition, e-learning platforms can facilitate collaboration and communication between students and teachers, allowing for personalized feedback and support.

➤ The fifth method is group work in which students can cooperate with each other to complete tasks related to the sulfuric acid production process. It is also useful to encourage students to work in groups and teams. Students collaborate with other members of the group to perform the steps of sulfuric acid production, share information, and present results. Group work units help students develop skills related to cooperation, communication and physical work.

➤ The sixth method is problem and question based teaching, students can use problems and questions and problems related to sulfuric acid production process. It helps students to analyze, discuss and strengthen their understanding, develop analytical skills, critical thinking and understanding of chemistry. Problems and questions lead students to develop critical thinking, problem solving, and chemistry skills.

Pedagogical technologies are used as important tools to increase interest in sulfuric acid production training, gain experience, develop practical skills, increase analysis and

imagination skills. These technologies help students to develop their scientific and experimental activities and learn chemistry in a practical way.

In addition, a teaching method called the "cluster method" can be used to teach sulfuric acid production, which has several applications. The cluster method helps improve student understanding, analyze learning material, and increase the effectiveness of practical training. There are several ways to teach the topic of sulfuric acid production using the cluster method. The cluster method is effective in enhancing student understanding, analysis of learning material, and transfer of learning to practice. Creating a cluster structure, defining clusters, writing clusters and evaluating clusters - using the cluster method to analyze the sulfuric acid production process allows students to develop their teamwork and skills. This method helps students to express their ideas, discuss and master working in physical practice.

✓ The first step is to create a cluster structure: this allows students to be divided into groups for cooperation, communication and physical work.

✓ The second step is the definition of clusters: each cluster has a certain topic, task or problem for a group of students. This helps improve their thinking, reasoning and problem solving skills.

✓ The third stage is recording clusters: students write down their thoughts, analyze data, answer questions and record results. This will help improve their comprehension and writing skills.

✓ Fourth stage - cluster evaluation: students evaluate their work and the work of their group mates. This will help them understand their strengths and weaknesses and improve their performance. Technical terms: sulfuric acid, cluster method, group work, communication, performance evaluation.

Conclusion:

The integration of pedagogical technology in the training of sulfuric acid production in industry has the potential to significantly improve learning outcomes and better prepare professionals for real-life application. By incorporating e-learning platforms, virtual reality simulations, and interactive multimedia content, educators can provide a more engaging and effective learning experience for students and professionals.

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