INTERACTIVE TEACHING OF THE TOPIC OF CARBOHYDRATES USING KWL, PROBLEM-BASED EXPLANATION, AND BRAINSTORMING METHODS

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This article explores the importance of interactive methods in teaching chemistry, particularly the effectiveness of using KWL (Know, Want to Learn, Learned), problem-based explanation, and brainstorming methods in teaching the topic of carbohydrates. The application of modern teaching technologies enhances students' engagement, critical thinking skills, and interest in the subject. These methods help students organize their knowledge, better understand new concepts, and apply them in real-life situations. Modern chemistry education is shifting away from traditional methods towards more interactive and student-centered approaches. The topic of carbohydrates is closely related to biology, medicine, and the food industry, making it insufficient to rely solely on conventional explanatory methods. To ensure students actively engage with the topic and explore it in depth, various interactive teaching strategies must be implemented. KWL, problem-based explanation, and brainstorming methods play a crucial role in this process. The KWL method helps students determine their prior knowledge about the topic, clarify what they want to learn, and systematically record what they have learned. The problem-based explanation method enhances their critical thinking and analytical skills. Meanwhile, brainstorming encourages creative thinking and allows students to explore multiple solutions [1, 2].

The use of interactive methods in chemistry lessons aligns with modern educational standards. Engaging students as active participants rather than passive listeners increases their motivation and academic success. Since the topic of carbohydrates has real-world applications, discussing it within the context of real-life problems further strengthens students' interest and understanding. The objective of this article is to analyze the effectiveness of using KWL, problem-based explanation, and brainstorming methods in teaching the topic of carbohydrates in chemistry lessons and to assess their impact on students' knowledge retention and learning engagement. The implementation of these interactive teaching strategies provides several key benefits: These methods encourage students to conduct independent research and actively engage in the lesson., students analyze presented problems and discuss various solutions, connecting the topic of carbohydrates to real-life applications enhances student motivation. This study presents the following innovations compared to traditional teaching methods: Students identify what they already know, determine what they want to learn, and summarize what they have learned. This approach ensures active participation and encourages students to take control of their own learning process. Students are presented with real-life carbohydrate-related issues, such as healthy nutrition, diabetes, and the role of carbohydrates in the food industry. They analyze these problems and propose potential solutions. Students generate and discuss different ideas in groups, developing a broader perspective on the topic. This method stimulates creative thinking and strengthens their ability to engage in scientific discussions [3].

Conclusion.Research findings indicate that applying KWL, problem-based explanation, and brainstorming methods in chemistry lessons significantly increases student engagement and interest in the subject. These methods are not only effective in delivering knowledge but also essential in developing students' analytical and creative thinking skills. The problem-based explanation method encourages students to seek multiple solutions to a given problem, fostering critical thinking. Brainstorming enhances creative thinking and enables students to generate and evaluate diverse perspectives collectively. The KWL strategy helps students organize their prior knowledge, retain new information effectively, and reflect on their learning. The application of these methods has resulted in increased academic performance, higher student participation, and the ability to apply chemistry knowledge to real-life scenarios. Expanding and refining these approaches will further improve chemistry education, making it more interactive, engaging, and relevant to students' lives.

References

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