MODERN APPROACHES TO TEACHING THE TOPIC OF NITROGEN

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This article explores the use of modern pedagogical technologies to achieve positive teaching outcomes in chemistry lessons on the topic of nitrogen. Specifically, the application of Cluster and INSERT methods in teaching nitrogen's properties, its cycle in nature, and its areas of use are analyzed. This approach enhances students' analytical thinking skills and facilitates a more effective understanding of scientific knowledge. Nitrogen is one of the most abundant elements in nature and is essential for the continuation of life. Comprising approximately 78 % of the atmosphere, nitrogen plays a critical role in the composition of key biochemical components in living organisms such as proteins, amino acids, and nucleic acids. Teaching its properties and role in nature not only increases students' interest in chemistry but also fosters an ecological mindset. Topics like nitrogen's atmospheric cycle, the impact of thunderstorms, the nitrogen fixation process, and its industrial applications provide students with both intriguing and complex knowledge.

Using modern teaching methods to instruct on nitrogen enhances lesson interactivity, helps students systematize their knowledge, and develops their critical and creative thinking skills. This approach incorporates more student-centered methods into the educational process, ensuring active participation of students in the learning environment.

Cluster method: The cluster method helps students systematize their ideas around a topic. Using this method in teaching nitrogen allows students to easily grasp its chemical and physical properties, role in nature, and applications. Students write the word "Nitrogen" in the center and create subtopics around it, completing the connections between these subtopics with their own insights.

INSERT method: The INSERT (Interactive Noting System for Effective Reading and Thinking) method is used to help students more effectively comprehend and evaluate the texts they read. Applying this method to the topic of nitrogen enables students to compare their prior knowledge with new information and reflect their thoughts through notes. This approach ensures that students remain active while reading and form their understanding more accurately. Teaching the topic of nitrogen using modern methods increases the interactivity of the educational process and enhances students' thinking and analytical skills. This approach also allows students to grasp scientific information more accurately. The objective of this article is to facilitate easier and more effective learning of the content by using modern pedagogical methods in teaching nitrogen, improve the quality of the educational process, and develop students' scientific thinking skills. The combined use of Cluster and INSERT methods in this teaching approach ensures a comprehensive understanding of the topic of nitrogen. These methods enhance students' skills in analyzing, categorizing, and evaluating information.

Teaching the topic of nitrogen using the Cluster and INSERT methods positively impacts students' comprehension of the material, development of thinking and analytical skills, and formation of scientific reasoning. These methods also increase the interactivity of the educational process, ensuring active student participation. While the cluster method helps students systematize their knowledge visually, the INSERT method develops their skills in personal evaluation and analysis of the texts they read. This approach encourages more active involvement in the educational process and fosters greater interest in the subject of chemistry. Additionally, these methods introduce a creative perspective to the teaching process and contribute to the formation of progressive thinking in students.