

THE IMPORTANCE OF INTERACTIVE LEARNING IN THE TEACHING-LEARNING PROCESS IN SCIENCE

by:

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Interactive learning has become a cornerstone of modern education, particularly in the field of science. By actively engaging students in the learning process, this approach fosters deeper understanding, critical thinking, and curiosity. Unlike traditional methods where learners passively receive information, interactive learning emphasizes participation, collaboration, and experiential engagement, making it particularly effective for teaching scientific concepts.

In the context of science education, where complex theories, processes, and phenomena are often discussed, interactive learning provides an opportunity to break down abstract ideas into tangible, understandable elements. This approach allows students to connect theoretical knowledge to real-world applications, enhancing both comprehension and retention. For example, conducting hands-on experiments to demonstrate principles like chemical reactions or Newton's laws enables students to experience the concepts firsthand, making learning more meaningful and memorable.

One of the key benefits of interactive learning in science is that it cultivates curiosity and critical thinking skills. Science thrives on inquiry, and interactive strategies such as experiments, group discussions, and problem-solving activities encourage students to ask questions, formulate hypotheses, and test their ideas. These practices align with the scientific method, ensuring that students not only learn the content but also the process of scientific investigation.

Interactive learning also supports collaboration and communication, which are essential skills in both education and the professional world. Activities such as group projects, debates, and peer-to-peer teaching require students to work together, exchange ideas, and develop shared solutions to problems. For instance, a group tasked with building a model of an energy-efficient house must integrate their understanding of concepts like energy transfer, insulation, and renewable resources while working as a team. This collaborative process not only reinforces scientific principles but also enhances interpersonal skills, preparing students for future academic and professional environments.

Another advantage of interactive learning is its ability to accommodate diverse learning styles. Traditional lecture-based methods often cater primarily to auditory learners, leaving visual, kinesthetic, and other types of learners at a disadvantage. Interactive approaches, on the other hand, incorporate a variety of tools and techniques, such as simulations, experiments, multimedia presentations, and hands-on activities, to address the needs of different learners. For example, visual learners might benefit from animations illustrating the process of mitosis, while kinesthetic learners might better understand the concept through role-playing or using physical models.

Furthermore, interactive learning helps students develop a positive attitude toward science. Many students perceive science as difficult or intimidating due to its reliance on abstract reasoning and technical terminology. By making the learning process engaging and participatory, interactive strategies demystify these challenges and foster a sense of excitement and achievement. A student who successfully builds a functioning circuit in a physics class, for instance, not only grasps the concept of electrical flow but also gains confidence in their ability to tackle scientific problems.

From a teacher's perspective, interactive learning provides valuable insights into students' understanding and progress. Traditional assessments like quizzes and exams offer only a limited view of a student's grasp of the material, whereas interactive activities allow educators to observe how students think, collaborate, and apply knowledge in real time. This enables teachers to identify misconceptions, provide immediate feedback, and tailor their instruction to meet the needs of individual learners.

Despite its many advantages, implementing interactive learning in science also presents challenges. It often requires more time and resources compared to traditional methods. Teachers must invest effort into planning activities, acquiring materials, and managing classroom dynamics during interactive sessions. Additionally, the availability of resources, such as laboratory equipment or technology, can vary significantly between schools, particularly in underserved areas. Addressing these challenges requires institutional support, professional development for teachers, and equitable access to resources.

Ultimately, the importance of interactive learning in science education cannot be overstated. By actively involving students in the teaching-learning process, this approach nurtures a deeper understanding of scientific principles, encourages critical and collaborative thinking, and prepares students for the demands of a rapidly evolving world. As science continues to play a vital role in addressing global challenges, fostering interactive learning experiences ensures that students are equipped with the skills and mindset needed to contribute meaningfully to society.

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