

THE ESSENCE OF HANDS-ON LEARNING IN SCIENCE CLASSES

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Students learn by doing something. Practical scientific activities encourage observation, questioning, touch, smell, and experimentation, where students have the opportunity to discover independently. They are more likely to learn better if it is brought only in the form of a genuine experience. Critical thinking skills are strengthened during scientific activities. The students can practice metacognition and can answer questions on their own. Therefore, those students who have a physical experience with scientific concepts can gain a deeper understanding of the lesson and achieve better academic performance. According to Ingmire (2015), the students who took a practical approach to learning had activation in sensory and motor-related parts of the brain that is good for examining the concepts.

Hands-on experience can benefit students, especially in virtual labs and online learning. The physical experience is helpful in the early stages of learning and science education. Frank (2021) mentioned that the primary method of teaching science is to have students read textbooks, present important scientific discoveries as facts, and minimize or omit the details of scientific methods and procedures. Traditionally, it was more of listening to the lecture. In contrast, practice-oriented science lessons focus on methods for gaining new scientific knowledge. In practical science, students' specific kinesthetic behaviors are associated with abstract concepts, and these activities tend to increase student motivation and involvement.

Consequently, the teachers should provide activities that may help expand the students' experiences. Learner-centered should be evident in the classroom, where the students should discover learning through practicing learning-by-doing so as to guarantee the retention of learning.

References:

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