QUESTION GUIDED INSTRUCTION: A NEW TOOL TO IMPROVE THAI STUDENTS' THINKING SKILLS IN THE PHYSICS EXPERIMENT CLASS

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ABSTRACT

Inquiry based teaching has long been accepted as an effective teaching approach in science education. The inquiry approach has been shown to encourage students' thinking skills in many disciplines. In this research, the inquiry approach is implemented through the use of guiding questions during instruction in physics experimental classes. The guiding questions are designed to challenge students and to encourage them to learn a physics experiment not only with their hands but also with their minds. They are embedded throughout the experiment, beginning to end. The guiding questions cover three particular aspects considered to be essential to succeed in learning while doing the experiment. The first aspect is relevant physics concepts, the second is the role of key equipment and the third is important techniques necessary to perform the experiment. The guiding questions are designed to encourage students' thinking at the different levels corresponding to Bloom's taxonomy. The study was conducted with 6 second year physics students from Thailand. The approach was evaluated using interviews and demonstrated that students' thinking skills was better developed and they did engage with their minds in the physics experimental class.

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