

Enhancing Students' Understanding in Simple Harmonic Motion by Using Video Analysis

Wednesday, May 20, 2015 4:45 PM (15 minutes)

Simple harmonic motion is physics' topic that the student still has misconception and difficulty. Predict-observe-explain approach is based on constructivism. It is designed for engaging the student to the learning situation while the video analysis technique supports students to link a real world and theoretical analysis. Therefore, this study aimed to enhance students' understanding of simple harmonic motion concepts, including velocity, acceleration and restoring force, by using predict-observe-explain approach integrated with video analysis technique. The participants were 37 grade 10 students in science class at Satrichaiyaphum school, Chaiyaphum province in the second semester of 2014 academic year (November 2014 - March 2015). The research tools were worksheets and lesson plans based on predict-observe-explain approach, Tracker program, and simple harmonic motion conceptual test. Students' did experiments and observed by using mobile's camera recorded the motion of mass attached spring and simple pendulum. Then the recorded video was analyzed through Tracker program. The two-tier simple harmonic motion conceptual test as a pre-test and post-test used to determine students' understanding into five types including complete understanding, partial understanding, partial understanding with specific alternative conception, alternative conception and no understanding. The results showed that students' understanding was developed in all simple harmonic motion concepts.

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Session Classification: Physics Education (APRU)

Track Classification: Physics Education