

Modification of Attitude Towards Physics of High School Students by Using STEM Education Lessons on Simple Harmonic Motion.

According to the most of the low academic achievement of high school students, due to a negative attitude towards physics. The aim of this study is to provide a positive attitude in physics for high school students by the trial and development of a STEM Education lesson in simple harmonic motion. The lessons are divided into 3 parts.

The first part: Instructor provides a basic knowledge of Simple Harmonic Motion to students. The second part: Students do an experiment in order to study the relationship between the oscillation period and the string length and the mass of simple pendulum. And the last part: Students using simple pendulum knowledge to design the length of the string according to the conditions of two acrobatics with different masses were swinging together and touching but without bumping into each other.

The study shows that when trialing lessons with 2 groups, totaling 52 of high school students. It was found that the mean of the positive attitudes of students before the trial, which was low has increased to a large level. Moreover, when students testing the cognition of simple harmonic motions with a test with a level of difficulty similar as the Ordinary National Educational Test (O - NET), the result shows that the average of post-study score was significantly .05 higher than before and all targeted students scored more than 50% average.

In conclusion, teaching physics by STEM Education lesson provided the efficient academic achievement level and also increased the positive attitude in physics toward high school students.

Primary author: Dr TEEVASUTHORNSAKUL, Chalongchai (Burapha University)

Co-author: Mr KUMMOOL, Puwanat

Presenters: Dr TEEVASUTHORNSAKUL, Chalongchai (Burapha University); Mr KUMMOOL, Puwanat; Ms YODKHAM, Ploypailin

Track Classification: Physics Education