

# Using Modules to Teach Conservation of Momentum to High-School Students

*Wednesday, 20 May 2015 16:15 (15)*

The objective of this study was to improve student's understanding and problem solving skill for high-school students in the topic of conservation of momentum in the collision. The topic covered concepts of momentum and impulse, type of collision, law of conservation of momentum and collision in one and two dimensions.

We used the learning modules that were composed of the guided worksheet , demonstration for each type of collision and the strategies for problems solving.

The modules were used to teach grade-10 students at a school in Bangkok in 2014. Two classes were taught by using the modules. The other two classes were taught by traditional teaching. After finishing the topic of momentum, all students were asked to do a test in the topic of conservation of momentum in the collision.

The test consisted of 4 questions. Question 1 asked about the direction and speed of collision in one dimension. Question 2 asked students to determine whether a given situation is elastic or inelastic. Question 3 asked about the equations needed to solve a one dimensional elastic collision. The last question asked about a simple collision in two dimension.

The preliminary results showed that students in both classes teaching with these new modules had significantly better understanding than the traditionary classes.

## Summary

**Primary author(s) :** Mr UNYAPOTI, Trai (Department of Physics, Faculty of Science, Mahidol University, Bangkok, THAILAND 10400)

**Co-author(s) :** Dr ARAYATHANITKUL, Kwan (Department of Physics, Faculty of Science, Mahidol University, Bangkok, THAILAND 10400); Dr EMARAT, Narumon (Department of Physics, Faculty of Science, Mahidol University, Bangkok, THAILAND 10400)

**Presenter(s) :** Mr UNYAPOTI, Trai (Department of Physics, Faculty of Science, Mahidol University, Bangkok, THAILAND 10400)

**Session Classification :** Physics Education (APRU)

**Track Classification :** Physics Education