

Katsadapond Daha 2014: Developing Grade 10th Students' Problem Solving Skills by Using Problem Based Learning in the Topic of Momentum and Impulse. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Mr. Ekgapoom Jantarakantee, Ph.D. 211 pages.

The objectives of this research were 1) to develop grade 10th students' problem solving skills before and after using Problem Based Learning and 2) to explore the learning process of Problem Based Learning in the Topic of Momentum and Impulse that affected the students' problem solving skills. This study was an action research. The research participants were 38 grade 10th students. The research instruments were problem solving skills test; teacher's journals; exercises; and students' learning journals. The problem solving skills in each component was analyzed by categorizing students' answers into four groups and calculating frequency and percentage in each group of the answers. For the learning process of Problem Based Learning in the topic of Momentum and Impulse was analyzed by content analysis and generating theme.

The results indicated that: 1. Problem Based Learning successfully develop students' problem solving skills. It was found that before learning most of the students were able to understand and suggest solutions at good level. The operating plan was at fair and poor level, whereas the checking results was at poor level. After using problem based learning, it found that most of the students were in understanding and suggesting solutions and operating plan at excellent level, while the checking results were at good level. 2. Suitable teaching techniques to the problem based learning process in the topic of Momentum and Impulse are as follows: 1) For the identifying and understanding teacher should provide alternative multimedia such as the Internet, sample pictures, etc.; 2) For the studying, synthesizing, concluding and evaluating teacher should provide students closely guidance; 3) For the understanding problems, studying, synthesizing, concluding and evaluating teacher should allow students to work in groups and let them share ideas; 4) For the six step teacher should allow students to independently study and moreover, provide learning environment encouraging students' problem solving skills.

Student's signature

Thesis Advisor's signature