

## THE PROJECTILE LAUNCHER WITH MOTION PATH FOR ENHANCING STUDENTS' PROBLEM-SOLVING SKILLS

Physics experiments are taught in most schools, the tests are presented by teachers or conducted by students on a pre-prepared set of instructions due to limited time. However, in classroom experiments, it does not seem enough to develop students' experimental and problem-solving skills. This research aims to develop students' problem-solving skills. Passed the experiment by using a projectile launcher that shows trajectory. The students jointly built experimental tools and conducted experiments within the group. The participants were 10 grade, at Nikompattanawit school, Yala province, during the second semester of the 2020 academic year. Assessment tool for analyzing student's experimental and problem-solving skills with projectile motion is the motion trajectory projectile launcher. Created by the students themselves Test log Problem-Solving Ability Test And the observational behavior of the students. The results of the study showed that 1) Students can create a series of projectiles showing trajectories. The experimental set is can demonstrate 3 types of projectile motion Moreover, the experimental set can be tested in a small area. The experimental equipment is small, easy to carry, able to see the path and pattern. The path of movement on the worksheet allows students to visualize and conduct experiments using a collaborative set of experiments built into the group according to the projectile principles. Experimented with objects at different angles and able to use the results of the experiments to calculate different values. Find the error and summarize the results of the experiment. 2) Students have problem-solving skills. The problem-solving development was at a High gain in the range of 0.72 - 0.92 overall behavior of students throughout the learning was active learning.

KEYWORDS: PROJECTILE MOTION, COLLABORATIVE, PROBLEM-SOLVING SKILLS, ACTIVE LEARNING, HIGH SCHOOL PHYSICS

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