

Developing STS Projectile Motion Unit for Providing Students' perception of the relationship between Science Technology Engineering and Mathematics

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STEM education suggested that students should be enhanced to learn science with integration between Science, Technology, Engineering and Mathematics. To help Thai students make sense of relationship between Science, Technology, Engineering and Mathematics, this paper presents learning activities of STS Projectile Motion Unit. The developing of STS Projectile Motion Unit is a part of research that aimed to enhance students' perception of the relationship between Science Technology Engineering and Mathematics. This paper will discuss how to develop Projectile Motion Unit through STS approach in framework of Yuenyong (2006) where learning activities were provided based on 5 stages. These included (1) identification of social issues, (2) identification of potential solutions, (3) need for knowledge, (4) decision-making, and (5) socialization stage. The learning activities could be highlighted as following. First stage, we use movie of 'Conan the barbarian (human catapult)'. Second stage, students will need to identification of potential solutions by Create Catapult Model. The need of scientific and other knowledge will be proposed for various alternative solutions. Third stage, students will gain their scientific knowledge through laboratory and simulation of projectile motion. Fourth stage, students have to make decision for the best solution of designing and creating catapult model based on their scientific knowledge and others (e.g. mathematics, economics, art, value, and so on). Finally, students will present and share their catapult model in society (e.g. social media or exhibition) in order to validate their ideas and redesigning.

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