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The Development of Integrated Real-Life Video and Animation with Addie Based on Constructive for Improving Students' Mastery Concept in Rotational Dynamics

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Abstract : This study aims to investigate the students' mastery concepts enhancement between students who are studying by using Integrated Real-Life Video and Animation (IRVA) and students who are studying without using IRVA. The development of IRVA is conducted by five stages: Analyze, Design, Development, Implementation and Evaluation (ADDIE) based on constructivist for Rotational Dynamics material in Physics learning. A constructivist model-based learning used is Interpretation Construction (ICON), which has the following phases: 1) Observation, 2) Construction interpretation, 3) Contextualization prior knowledge, 4) Conflict cognitive, 5) Learning cognitive, 6) Collaboration, 7) Multiple interpretation, 8) Multiple manifestation. The IRVA is developed for the stages of observation, cognitive conflict and cognitive learning. The sample of this study consisted of 32 students experimental group and a control group of 32 students in class XI of the school year 2015/2016 in one of Senior High Schools Bandung. The study was conducted by giving the pretest and posttest in the form of 20 items of multiple choice questions to determine the enhancement of mastery concept of Rotational Dynamics. Hypothesis testing is done by using T-test on the value of N-gain average of mastery concepts. The results showed that there is a significant difference in an enhancement of students' mastery concepts between students who are studying by using IRVA and students who are studying without IRVA. Students in the experimental group increased by 0.468 while students in the control group increased by 0.207.

Keywords : ADDIE, constructivist learning, Integrated Real-Life Video and Animation, mastery concepts, rotational dynamics
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