3 - Science Teaching Processes | Empirical

SP - (15937) - EFFECT OF EDUCATIONAL RECONSTRUCTION ON STUDENT LEARNING PROGRESS IN MECHANICS AT LOWER SECONDARY SCHOOL

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Short Abstract

Learners have difficulties learning physics' concept of force. Even after instruction, students often do not have an adequate understanding of physics. A two-dimensional dynamic mechanics approach by Wiesner has been shown in several previous studies to be a more successful approach than not further specified "conventional" instruction. Because these studies lack control over the "conventional" instruction conclusions considering the educational reconstruction cannot be drawn specifically. Therefore, this study aims at quantitatively investigating the influence of educational reconstruction on learning progress. Wiesners' dynamic mechanic concept that considers 2D motions and force impacts is compared with an adaptation considering 1D motions and constant forces. Teaching materials for both groups were designed as similar as possible. The results of this pre-post study seem to show an advantage of the 2D course, but are not significant due to a reduced sample size because of the Corona lockdown. Results enhanced by a supplementary data collection will be presented at ESERA conference 2021.