MECHANICAL WAVE CONCEPTS OF THAI HIGH SCHOOL STUDENTS: COMPARING LEARNED AND UNLEARNED GROUPS

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Mechanical waves are one of the basic topics of physics, it is also the basis of various fields such as physical optics, geophysics, engineering and medical physics. We present on a study that aims to investigate mechanical wave concepts of Thai high school students. Participants were 160 Grade-10 students from high school in Songkla province, Thailand. They were divided into two groups. The first group consisted of eighty students who already learned about mechanical waves and the second group consisted of eighty students who had not learned the topic yet. The main instrument was the Mechanical Wave Conceptual Survey (Tongchai et al., 2009), consisting of 22 multiple-choice questions. The researchers also asked students to provide their reasoning for choosing their answer for each multiple-choice question. The survey was administered to students and they were given 50 minutes to complete it. Students' answers and their reasoning were analyzed quantitatively and qualitatively. Students' responses were categorized into five groups of misconceptions in mechanical waves. These misconceptions were 1) transport particles, 2) require a medium, 3) lack energy, 4) have a speed proportional to frequency, and 5) undergo frequency change upon reflection. Responses from both groups of students indicated the same misconceptions.

REFERENCE

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