

Thai High School Students' Alternative Conceptions about Sizes of Contact Areas and Sliding Speeds of Objects influencing magnitudes of Frictional Forces

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Abstract

The aim of this study is to survey students' conceptual understanding about the factors that affect the magnitude of frictional forces. The study population was 305 Thai high school students (70% female). The data were collected via the conceptual open-ended questions designed by the authors. These questions were evaluated the content validity and revised by content experts. Results have revealed interesting alternative conceptions. For example, of about 70% of students believed that a frictional force magnitude depends on the size of contact areas between two objects. These students told that the bigger the size of contact areas, the larger the frictional force magnitude. Moreover, 95% of students in this study believed that a frictional force magnitude depends on the sliding speed of the object. Of about 65% of them believed that the faster the moving, the larger the frictional force magnitude. From what we have found, we suggests that instructors can use such alternative conceptions as the fundamental resources to set up teaching strategies in order to correct students' understanding on the frictional force concept.

Keyword : Frictional Force, Alternative Conception, The size of contact area, the sliding speed.

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