

UNIVERSITY STUDENTS' DIFFICULTIES AND MISCONCEPTIONS ON ROLLING, ROTATIONAL MOTION AND TORQUE CONCEPTS

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ABSTRACT

Rolling, rotational motion and torque is one of the main subjects of physics that the students have difficulties to comprehend. The aim of this study is to determine university students' difficulties and misconceptions about rolling, rotational motion and torque. The sample of the study consists of 100 students majoring mathematics education at Balıkesir University, Necatibey Faculty of Education, in the academic year of 2013-2014. The descriptive survey method was carried out in the study. There was one instrument, the Rolling, Rotational Motion and Torque Concept Test, consisted of 20 multiple-choice questions related to subject areas, in the study. The reliability coefficient of the test was found as $r=0.66$. After analyzing data obtained from the study, it was found out that university students have many difficulties understanding, applying and interpreting many fundamental concepts related to rolling, rotational motion and torque. It was also found that students' achievement levels were very low and they have many misconceptions about the subjects.

Key Words: University students, difficulties and misconceptions on rolling, rotational motion, torque concepts.