

GB2 9:30 a.m. Effectiveness of Instruction on Force and Motion in an Elementary Physics Course Based on Guided Inquiry*

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Student understanding of force and motion were investigated over a four-year period in the context of an inquiry-based, one-semester elementary physics course for nontechnical students. Instruction was designed to address the student difficulties that were identified. It was found that a majority of the students mastered the distance/velocity relationship and substantially improved their graphing and problem-solving skills. However, only a minority mastered the concept of acceleration and the force/motion relationship. Fundamental misconceptions of basic topics in kinematics and dynamics persisted with great tenacity.

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