



# Integrating Physics Into a Mathematics Content Course for Preservice K–8 Elementary Teachers

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## Abstract

Preservice elementary teachers generally have little background in physics or physics education. In fact, the subject is often avoided, instead enrolling in environmental science or biology. In order to improve preservice teachers' experiences, the authors integrated physics into an upper division mathematics algebra-infused content course. Five weeks of content using technology (motion sensors and data loggers) was integrated across seven courses taught by three different instructors. After engaging in a five-week physics-infused algebra intervention, what changes in mathematics teaching efficacy beliefs are found? To answer this research question, data were gathered from preservice teachers ( $n = 193$ ) using the Mathematics Teaching Efficacy Beliefs Instrument (Enochs, Smith, & Huinker, 2000) at a large public university in the southwest United States. Results showed statistically significant improvements in the personal mathematics teaching efficacy (PMTE) subscale, but not in the mathematics teaching outcome expectancy (MTOE) subscale. Implications for research and practice are discussed.