ZMATH 2016c.01008

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Technology, active learning, and retention in general education mathematics.

J. Comput. Math. Sci. Teach. 35, No. 1, 81-105 (2016).

Summary: Difficulties in general education mathematics courses may be attributed to many factors, primarily low proficiency in symbol manipulation, a perception that mathematics is an area which eludes mastery, a lack of engagement and effective practice. Educational technology can be a powerful aid in overcoming these factors. This work describes the implementation of an active learning model for a general education mathematics course supported by several types of technology. A tutorial and homework support system was used to promote active engagement in and out of the classroom, while spreadsheet software was used to address meaningful applications and overcome symbol manipulations issues. Class outcomes are discussed in terms of increase of productive grades as well as enhanced student attitudes towards mathematics.

Classification: U55 U75 D35
Keywords: educational media; educational technology; information technology; technology-supported learning environments; research; university teaching; courses; mathematical model building; course management software; tutorial software; homework; tutorial and class management systems; educational software; mathematical software; e-book; worksheets; student-student interaction; communication; experience reports; achievement measurement; patterns of usage; student attitudes; active learning