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Pre-service teacher training on game-enhanced mathematics teaching and learning.

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Summary: The paper reports the main insights from a study aimed at equipping a group of pre-service teachers with the knowledge, skills, and practical experience required to effectively integrate educational games within the mathematics curriculum. An instructional intervention based on the Technological Pedagogical and Content Knowledge framework was implemented in an undergraduate mathematics methods course attended by thirteen ($n = 13$) prospective primary teachers. Participants experimented with different ways in which educational games could help students internalize key mathematical concepts across the primary curriculum, and were familiarized with the design principles for constructivist gaming environments. Upon completion of a unit on game-enhanced learning, they worked in small groups to develop and deliver, during their teaching placements, instructional episodes integrating the use of serious games. Findings indicate a positive impact on pre-service teachers' perceptions regarding game-based learning, and on their competence in selecting, evaluating, and productively utilizing digital games as an instructional tool.

Classification: D39 D40 U70 U50

Keywords: educational games; serious games; game-based learning; game-enhanced learning; pre-service teacher training; teacher professional development

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