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Learning to teach mathematics through problem solving: investigating the effectiveness of a mathematics teaching methods.

Fritzlar, Torsten (ed.) et al., Problem solving in mathematics education. Proceedings of the 2015 joint 17th conference of ProMath and the 2nd GDM working group on problem solving, University of Halle-Wittenberg, Germany, September 3–5, 2015. Münster: WTM-Verlag (ISBN 978-3-95987-012-2/pbk; 978-3-95987-013-9/ebook). *Ars Inveniendi et Dejudicandi* 6, 237-248 (2016).

Summary: In order to help students learn mathematics with understanding, which requires teaching mathematics through problem solving, teachers should provide their students with challenging mathematical problems. Thus, one responsibility of teacher education programs is to guarantee that future teachers develop the necessary knowledge and skills for preparing high-quality tasks that promote complex mathematical thinking. The purpose of this study was to evaluate the effectiveness of a mathematics teaching methods course primarily through analyzing the quality of problems that prospective teachers prepared. Interviews were also conducted for a detailed understanding of the role of methods course in supporting the development of prospective teachers' competencies.

Classification: D50 D40 D39

Keywords: problem solving; teaching methods