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Mathematical thinking: challenging prospective teachers to do more than ‘talk the talk’.

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Summary: This paper reports on a research project which aims to improve prospective mathematics teachers’ relational understanding and pedagogical beliefs for teaching in second-level Irish classrooms. Prospective mathematics teachers complete their teacher education training with varying pedagogical beliefs, and often little relational understanding of the mathematics they are required to teach at second level. This paper describes a course designed by the authors to challenge such beliefs and encourage students to confront and possibly transform their ideas about teaching, while simultaneously improving their subject knowledge and relational understanding. Both content and pedagogical considerations for teaching second-level mathematics are integrated at all times. The course was originally optional and was piloted and implemented in a third-level Irish university. Apart from offering an insight into the design considerations when creating a course of this type, this paper also addresses some of the challenges faced when evaluating such a course. Overall participant feedback on the course is positive and both qualitative and quantitative results are provided to support this and also highlight the efficacy of the programme.

Classification: C29 D39 C39

Keywords: teacher education; prospective mathematics teachers; relational understanding; pedagogical beliefs; mathematical thinking

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