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Using a model for planning and teaching lessons as part of mathematics teacher education.

Zaslavsky, Orit (ed.) et al., Constructing knowledge for teaching secondary mathematics. Tasks to enhance prospective and practicing teacher learning. Berlin: Springer (ISBN 978-0-387-09811-1/hbk; 978-0-387-09812-8/ebook). Mathematics Teacher Education 6, 291-306 (2011).

Summary: This chapter describes a task for prospective teachers in which they use a particular planning and teaching model as a way of coming to understand the challenges and opportunities in non-routine tasks, and in particular considering the steps that are necessary in converting the tasks into learning opportunities. A particular focus of the planning and teaching model is the way that it addresses the needs of low achieving students, and especially those who may be disadvantaged due to social circumstances. The planning and teaching model involves using content specific open-ended tasks; planning a hypothetical trajectory of tasks; making the relevant pedagogies explicit; ensuring there is sufficient shared experience to allow meaningful discussions and review; and, developing enabling prompts to support students experiencing difficulty as well as extending prompts to engage students who complete the set work. Each of these elements can form the content of teacher education programs for prospective and practising mathematics teachers.

Classification: D49 D20 B50

Keywords: mathematics tasks; mathematics lessons; planning and teaching mathematics; preservice teacher education; lesson planning; classroom tasks; problem posing; open ended problems; constructivism; social interactions; learning; content selection; context

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