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Tools and settings supporting mathematics teachers' learning in and from practice.

Even, Ruhama (ed.) et al., The professional education and development of teachers of mathematics. The 15th ICMI Study. New York, NY: Springer (ISBN 978-0-387-09600-1/hbk; 978-0-387-09601-8/ebook). New ICMI Study Series 11, 185-209 (2009).

Summary: The purpose of this chapter is to present a synthesis of the papers from Strand II which address the tools, dynamics, tasks, contexts, and learning settings that can be mobilized for pre-service and in-service mathematics teacher education. Within this focus, we have identified four topics around which our chapter is organized. In the first section, we deal with tasks for mathematics teacher education, including mathematical problems and activities, which are offered to teachers as opportunities for them to deepen their knowledge of what they have to teach to students and how they can teach this. These tasks are at the heart of mathematics teacher education and determine what teachers are learning, along with several working forms, dynamics, and contexts. Closely connected to the tasks is the topic that is addressed in the next section, the analysis of instructional episodes. These episodes include narrative cases, video cases, and lesson studies. They all provide opportunities for teachers to study and reflect on teaching-in-action. The last two sections tell us more about the context in which teachers' learning takes place. The former deals with teachers' learning communities, addressing teachers as learners in communities that constitute an environment in which the participants share experiences, meanings, knowledge, lessons, and stories about the school's practice. The latter describes e-learning in mathematics teacher education and confirms again the power of communities even when these communities are virtual.

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