

## Theme 1.3

# Mathematics Educators' Activities and Knowledge

Editor: **Pedro Gómez**, *Universidad de Granada, Spain*

Teacher educators are important in mathematics teacher education. They are responsible for designing and developing mathematics teachers' learning experiences. Research in mathematics education is beginning to recognize the relevance of exploring and reflecting on mathematics teacher educators' activities and knowledge. That is why this topic is included in this book, even though there were no papers on the subject from the study conference participants. The theme is organized in four papers referring to different aspects of mathematics teacher educators' roles, knowledge, and learning.

In the first chapter, "Mathematics educators' knowledge and development", Zaslavsky suggests parallelisms among the learning processes of mathematics teachers, mathematics teacher educators, and mathematics teacher educator educators. She highlights the role of tasks for promoting learning and of the educator as facilitator. Since there are no teacher educator education programs, teacher educators learn by reflecting on their own experiences. Learning should emerge in the interplay of the teacher educators roles: as a researcher, as a facilitator, and as designer of tasks.

Pope and Mewborn's chapter, "Becoming a teacher educator: Perspectives from the United Kingdom and the United States", describes several aspects of educators' training and of becoming a teacher educator in the United States and the United Kingdom. They describe who becomes a teacher educator, what the tasks and duties of a teacher educator are, and how the training of teacher educators is being supported in both countries. They put in evidence, with the comparison of two countries, the great variety across and inside countries concerning how to become a mathematics teacher educator.

Chapman's chapter, "Educators reflecting on (researching) their own practice," is a clear and well organized literature review on mathematics educators reflecting and researching their own practice. She analyzes a set of studies in which educators systematically explore their teaching approaches taking into account all of the students in the educator's class. There are few such studies. She approaches the questions of what and how did they research, and what can be learned? There are several difficulties involved in this type of research. For instance, context is important and, therefore, one cannot generalise easily. Nevertheless, the point is that mathematics educators can and should learn from experience in order to better promote students' learning.

In the final chapter, “Educators and the teacher training context”, Millman, Iannone, and Johnston-Wilder suggest some ideas that can be valued by mathematicians and mathematics educators as issues on which collaboration can develop: the concept of the Knowledge Quartet, the notion of mathematical habit of mind, and the comparison of ways in which mathematicians present fractions to future teachers. They also present preliminary results of their international survey on mathematics and pedagogy content courses and the role of mathematicians and mathematics educators on them.