



TSG 29

PRESERVICE MATHEMATICAL TEACHER EDUCATION AT SECONDARY LEVEL

The Organizing Team

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Topic Study Group 29 (TSG 29) is dedicated to sharing and discussing significant new trends and development in research, theory, and practice related to the various aspects of secondary mathematics teacher education. It aims to offer an overview of the current state-of-the-art, invited contributions from experts in the field, presentations of high-quality research reports from an international perspective, and discussion of directions for future research.

In discussing the research studies from different countries, the TSG participants will also have an opportunity to learn about practices used around the world in relation to the education of preservice secondary mathematics teachers such as similarities and differences in the formal mathematics education of teachers, types and routes of teacher education and pathways to certification, curricula of mathematics teacher education, and factors that can influence similarities or differences.

A possible post-congress publication on contributions presented at TSG 29 will be discussed during the conference.

The TSG invites submissions of papers on research that address the following and other related topics regarding prospective secondary mathematics teachers (PSMTs):

PSMT Knowledge

- The nature of PSMTs' knowledge (content knowledge; pedagogical content knowledge; mathematics knowledge for teacher)
- Theoretical and methodological frameworks for studying PSMTs' knowledge
- The development of PSMTs' knowledge in the context of teacher education

- The relationship between PSMTs' knowledge and their practices

PSMT Professional Beliefs and Identities

- Theoretical and methodological frameworks for studying PSMTs' professional identities
- Experiences contributing to the development of PSMTs' professional identities during preservice education
- Experiences contributing to changes in PSMTs' professional beliefs during preservice education
- The relationship between PSMTs' practicum teaching and professional identity
- The nature of PSMTs' productive disposition

PSMT Field Experiences

- Models for field experiences (e.g., co-planning/co-teaching and paired placements) that best support PSMTs' development of effective teaching practices
- PSMTs' experiences in mathematics classrooms and issues related to their school placements
- Mechanisms that foster bidirectional relationships between partner schools and higher education institutions to support PSMTs in their field experiences
- Experiences that PSMTs should have prior to student teaching
- Activities to help PSMTs to become reflective practitioners during student teaching
- Different types of field experiences required for PSMTs' certification
- Best practices for preparing mentor teachers to work with PSMTs

Technologies, Tools and Resources

- Characteristics of technology, pedagogy and content knowledge (TPACK), development and assessment of PSMTs' TPACK
- Video cases and online interactive environments that support PSMTs' learning
- Mathematics tasks, textbooks and other curriculum materials to support PSMTs' learning
- Assessment tools used in PSMTs' mathematics education programs
- Tasks to assess PSMTs' mathematics knowledge for teaching

Teacher Educators' Knowledge

- The nature of mathematics teacher educators' knowledge for teaching PSMTs