



TSG 41

RESEARCH AND DEVELOPMENT ON TEXTBOOKS AND RESOURCES FOR LEARNING AND TEACHING MATHEMATICS

The Organizing Team

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TSG 41 focuses on issues related to the contents, design, development, use, and implementation of print and digital resources for learning and teaching mathematics. We seek contributions focusing on print and digital textbooks, but also on other resources for teaching and learning mathematics, e.g. teacher manuals, professional development materials, student learning and assessment materials, and online resources.

During ICME-14, we hope to bring to foreground and examine various theoretical and methodological approaches used to design, analyze, and empirically study learning and teaching resources and their use. In particular, we seek contributions addressing the following subthemes:

- a) The role and effects of print and digital textbooks and other resources in mathematics classrooms:
 - What teaching and learning resources are available in mathematics classrooms in different countries? What role do they play in mathematics teaching, learning, and assessment? What are the current effects of the use and implementation of these resources on student learning?
 - How is the role that the resources play affected by the digitalization of information and communication and the growing availability of digital and online resources? What are the effects of modern ICT (particularly internet) on students' use of learning resources?
 - How does the availability and use of digital resources affect student behavior, learning, and relationships to the subject of mathematics?
- b) The design and development of print and digital mathematics textbooks and other resources

- What are the theoretical foundations that guide the aspects of development and design of mathematics textbooks and other resources, such as the selection and progression of tasks, development of student competencies, considerations of and supports for envisioned teacher learning or change of practice, features of interactive elements and feedback in digital resources?
 - What do we know about designing resources for supporting specific *pedagogical intentions* for mathematical learning (e.g., project-based, inquiry-based or problem-based learning) and for supporting *mathematical learning* in environments with blended agendas (e.g., integrated, STEM, multiliteracies)?
 - What are the key differences in features and contents between print and digital resources that result from the affordances of digitalization?
 - How do we conceptualize interactions between resource designers and users? Specifically, what is the role of teachers and students in developing textbooks and other teaching and learning materials?
- c) The use and implementation of print and digital mathematics textbooks and other resources and related interactions among resources, teachers, and students
- What are the influences on the use and implementation of textbooks and other resources?
 - How are teachers supported in their interaction with and the implementation of textbooks and other resources?
 - How do teachers adopt and adapt new resources in their professional work?
 - How do teachers' individual resources interact with collective resources, and how could we model such relationships?
 - What are the consequences of the use of particular resources for the teaching of mathematics, and for teacher knowledge and professional development?
 - What resources do students use for learning mathematics and how do they use them?