



TSG 38

TASK DESIGN AND ANALYSIS

The Organizing Team

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There exists a complex, layered relationship between task designers, teachers, and students (Johnson, Clarke, & Coles, 2017). This complexity is well-illustrated by successful, theoretically-based long term design research projects, which have resulted in novel materials and approaches impacting teachers and students. ICMI Study 22 on Task Design in Mathematics Education resulted in a state-of-the-art summary of relevant research and insights about task design. TSG 38 at ICME-14 will use the resulting publication of ICMI Study 22 on Task Design in Mathematics Education (Watson & Ohtani, 2015) as a starting point and bring together researchers, developers and teachers who systematically investigate and develop theoretical and practical accounts of task design.

Tasks (and sequences of tasks) can shape possibilities for interactions between teachers and students. Through tasks, students can have opportunities to learn mathematical concepts, ideas, strategies, and also to use and develop higher order thinking skills and critical literacy. Teachers' pedagogies can include the selection, modification, design, sequencing, installation, observation and evaluation of tasks. This work of teaching often starts from textbooks and/or other resources designed by outsiders. We expect that the TSG participants will expand beyond textbooks, looking also at interdisciplinary efforts, instructional tools, online resources, and research methodologies.

The communities involved in task design are naturally overlapping and diverse. Stakeholders can include designers, professional mathematicians, teacher educators, teachers, researchers, learners, authors, publishers and manufacturers. Individual stakeholders may act in several of these roles.

We are looking for empirically grounded contributions that underlie design principles, theoretical approaches, and carefully analyzed cases and examples of tasks designed for promoting mathematical development. We plan to discuss (but are not limited to):

- Frameworks and principles for task design
- Methodological advances for studying task design in mathematics education
- Relationships between task design, anticipated pedagogies and student learning
- The role of tools in task design
- Task sequences for promoting conceptual understanding and/or higher order thinking skills
- Task design in innovative learning environments

The group welcomes contributions from primary or secondary education.