

CERME 11: Thematic Working Group 24

Representations in Mathematics Teaching and Learning

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Scope and focus of the Thematic Working Group

Representations of mathematical concepts and objects are an integral part of the doing of mathematics and thus an important part of teaching and learning mathematics. Here *representations* refers both to traditional mathematical productions such as graphs, diagrams, symbols, texts, models, and statistical tables, and also more broadly to encompass pictures, gestures, sounds, stories, metaphors and more. We are concerned with the creation, interpretation, use of, transition between, and reflection on such representations in our minds, hands, on paper, and with concrete or technological tools, with the purpose of depicting and communicating information, thinking about and developing mathematical ideas, and advancing understandings. Representations can be theorized and interpreted in various ways, and this working group welcomes papers from a variety of different theoretical and methodological frameworks.

Call for papers and poster proposals

We invite papers addressing (but not necessarily limited to) questions such as the following:

- How do the various aspects of representation interplay in mathematical problem solving?
- What processes are involved in learners making connections between, and moving flexibly amongst, the various modes, registers, or systems of mathematical representation?
- How can representations foster building relationships between the abstract and the concrete?
- What roles can representational forms and formats play in enabling and disabling learners?
- How may representation facilitate or hinder the reification of mathematical objects?
- How can non-conventional representational activity contribute to mathematical thinking?
- How may representational affordances (visual, auditory, haptic...) of computer technology change the dynamics of mathematics and its learning?
- How can teachers support learners in developing their representational and meta-representational competence?
- How might the affect generated by employing certain kinds of representations increase enjoyment of learning and doing mathematics?
- What components might be in an overarching theory of representation for math education?

Papers and poster proposals should use the CERME template, and conform to the guidelines at the [guidelines website](#). CERME 11 uses a [submission website](#). The authors submit the initial version of their paper on the website (uploading it both as a .doc and a .pdf file, and providing the required information, in particular the TWG number).

Reviews and decisions

Each paper will be peer-reviewed by two persons from among those who submit papers to this TWG. Please expect to be asked to review up to two papers yourself. The group leaders will decide about the acceptance of posters.

Important dates

- **15th July 2018:** Early bird submission (please refer to the [early bird website](#))
- **15th September 2018:** Initial submission by authors in the submission system.
- **3rd November 2018:** Initial decisions on papers and posters sent.
- **24th November 2018:** The authors submit a revised version if needed.
- **5th December 2018:** Final decisions sent.
- **12th December 2018:** Final version uploaded.
- **13th January 2019:** Papers available on CERME 11 website.