

CERME 12: Thematic Working Group 22

Curricular Resources and Task Design in Mathematics Education

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Scope and focus of the Working Group

On a macro-level, teachers and students work all the time with mathematics curriculum resources, digital or traditional, inside or outside the classroom: teachers, individually or collectively, select, (re-)design, modify and interact with such resources for their lesson preparations; for student assessment; and for the design of their courses. Moreover, such resources (e.g. educative curriculum materials) are the focus of professional development sessions, where mathematics teachers, sometimes with educational researchers, design and transform curriculum resources, often blended materials, and in that process develop design capacity and valuable knowledge in/for teaching.

On a micro-level, curriculum resources mostly contain tasks. The mathematics tasks used in curriculum resources and learning environments (derived from textbooks or other sources), their representation in resources, their sequencing, and the actions performed by the teacher during the enactment of these tasks can limit or broaden, in particular, the cognitive demand of the task and students' views of the subject matter. In doing so, they can influence the opportunities afforded to students to make mathematical connections, to develop mathematical concepts, skills, or habits of mind. Indeed, it is well documented in the literature that tasks play a key role in effective teaching, with an upsurge of publications on various aspects of task design (e.g., on task features that can help generate specific forms of mathematical activity), methods of task analysis (e.g., analyses of the learning affordances of specific kinds of tasks), and principles for task implementation within both conventional and digital learning environments (e.g., factors influencing the fidelity of implementation of tasks in the classroom). Students could also be involved in activities of task-design to foster their reflections about what they know, understand and do.

Call for papers and poster proposals

We welcome research papers (max. 8 pages) and poster proposals (2 pages) on:

- Empirical research on teachers' and students' interactions with curriculum materials/resources/tasks, related competencies (e.g. pedagogic design capacity), and influences on this interaction;
- Theoretical foundations and methodologies of task analysis helpful for task design and the design of curriculum resources;
- Studies on the use of carefully designed curriculum materials/resources/tasks to support implementation of particular learning goals and to enhance mathematical competencies;
- The collaboration among teachers, between teachers and researchers, and possibly also students for designing tasks/resources and analyzing their implementation;

Affordances and constraints of digital/conventional tasks/resources.

Papers and poster proposals should use the CERME template, and conform to the guidelines at www.cerme12.it CERME 12 uses an electronic submission system www.conftool.pro/cerme12 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. The group leaders will decide about the acceptance of posters.

Important dates

- **15th July 2021:** Deadline for [Early Bird Procedure](#)
- **15th September 2021:** Deadline for submission of papers and posters.
- **4th November 2021:** Preliminary decisions on papers.
- **12^h November 2021:** Preliminary decisions on posters.
- **2nd - 6th February 2022:** CERME 12 takes place.
- See www.cerme12.it/deadlines/ for other important dates