



Topic Study Group 3.3: Problem posing and solving in mathematics education

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Team details

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Overview

Issues related to problem solving in mathematics have been around for many decades in mathematics education research, dating back at least as far as the pioneering work of Pólya. As one consequence of this attention on problem solving, mathematics curriculum documents and school mathematics textbooks worldwide have emphasized problem solving as a key instructional objective and as an important component of students' mathematics learning.

By comparison, mathematical problem posing is a much younger field of inquiry in mathematics education. However, attention to this topic has grown rapidly in recent decades and curriculum frameworks in many countries have incorporated problem posing as an instructional focus.





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Both these topics, either considered independently or in interrelation, are of great interest to the research and practice communities in mathematics education all around the world, as illustrated through a certain number of working groups in international meetings (such as ICME and PME), books and special issues of journals.

Our overall aims in Topic Study Group 3.3 are:

1. To present an overview of research and development regarding mathematical problem posing and solving;
2. To identify new trends and developments in research and practice on these topics; and
3. To engage participants in critical reflection on research and development in relation to these topics, to inform an agenda for future research and development.

All the participants in the academic activities of the Topic Study Group will have an opportunity to reflect on and discuss issues and themes that address the relevance of research programs and results, current trends and agendas, and developments in problem posing and problem solving.

Colleagues who submit a paper or poster in TSG 3.3 will be engaged in the review process prior to the conference. We will select and organize presentations in order to enable discussion between participants during the conference.

Areas of interest

We welcome conceptual/theoretical, methodological, empirical, and developmental contributions (paper or poster proposals) related to any educational level.

Priority will be given to papers that are related to at least one of the following themes:

- The nature of problem posing and problem solving.
- The historical development of problem posing and problem solving.
- Research methodological issues in investigating problem posing and problem solving (qualitative, quantitative and mixed methods).
- The development and fostering of problem posing and problem solving.
- The relationship between problem posing and problem solving.
- Educational experiments and interventions focusing on problem posing and problem solving.
- The position and function(s) of problem posing and problem solving in mathematics curricula and textbooks.
- Teaching practices for problem posing and solving.
- Preservice and in-service teachers' training regarding problem posing and problem solving.





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- Students' and teachers' beliefs about problem posing and problem solving.
- Assessment of problem posing and problem solving (in class, in international studies, etc.).
- Problem posing and problem solving in talent development and in special education.
- Working on problem posing and problem solving in virtual learning environments.
- Supporting problem posing and problem solving with the use of digital tools.

How to make a submission to this Topic Study Group

Submissions for Topic Study Group Papers and proposals for Posters open 28 April 2023 via the official ICME-15 website, icme15.org. The website also contains a timeline of dates for the activity of the Topic Study Groups in the lead up to the Congress.

For questions about this TSG, please contact the Co-Chairs using the email addresses provided.

