



# Topic Study Group 5.10: Methods and methodologies in mathematics education research

## Strand A

## Team details

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## Overview

Research in mathematics education employs various methods and methodologies to explore relevant research topics and questions. TSG 5.10 is organized around those methods and methodologies central to ongoing research in mathematics education and aims to promote a discussion about various strands of them.

Research methods are the techniques or procedures to conduct studies to investigate a research topic or question. A methodology comprises a system of research methods (e. g., methods of data collection, data analysis, and validation) and the logic behind the system. Methodologies may be further informed by a paradigm that comprises assumptions on the nature of the social reality (e.g., ontology, epistemology, values). Which methods to choose, which methodology to adopt, and which





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paradigm to join profoundly shape research processes; therefore, reflecting on those issues and discussing them with colleagues are essential for mathematics education researchers to understand and improve research practices and develop a new method, methodology, or paradigm. We would especially like TSG5.10 to be a forum where many diverse seemingly opposing views on methodology (e.g., the tension between quantitative and qualitative methods) can come together to present and discuss the pros and cons to further our methodological insights. This can also include attention to innovative methods, like computational research methods, which make it more and more viable to study large amounts of both qualitative and quantitative data. There are still plenty of tensions to resolve, but we would like this TSG to be exactly the vibrant place at ICME-15 where such themes are presented and discussed.

### Areas of interest

Although this TSG assumes that every study is set with a substantive mathematics education research goal in mind, we aim to mainly promote scholarly discussion about methods and methodologies in mathematics education research. This can include, but is not limited to:

- Submissions that discuss the philosophical and paradigmatic underpinnings of mathematics education research and their consequences for research approaches.
- Submissions that discuss particular methodological themes, including those relevant to quantitative, qualitative, and mixed methods studies.
- Submissions that discuss the original contribution and usefulness of new and innovative methods, including computational research methods.
- Practical descriptions of the application of certain methods to practical, substantive research questions.
- Relevant, contemporary discussions in mathematics education research, including themes like replicability, transparency, and open research practices.

### 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](http://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.

