

# Topic Study Group 5.9: Theories in mathematics education

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## Team details\*

### Co-Chair

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### Members

Heather Johnson (University of Colorado at Denver, USA)

Kazuya Kageyama (Hiroshima University, Japan)

Rodolfo Vergel (Universidad Distrital Francisco José de Caldas, Colombia)

### IPC Liaison

Margaret Walshaw (Massey University, New Zealand)

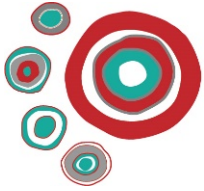
## Overview

Topic Study Group 5.9 at ICME-15 focuses on the exploration and advancement of theories in mathematics education. The group aims to address key questions and pressing issues in the field by building on previous research and fostering a culture of critical dialogue and debate. This will be achieved by navigating the diverse range of existing theories and embracing various theoretical perspectives to propel the mathematics education field forward.

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\* Team details correct at time of print; 28 April 2023





## 15th International Congress on Mathematical Education

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Theory is integral to scholarly activity and essential for driving progress in both mathematics education research and practice. The field of mathematics education draws insights from numerous disciplines and is currently embracing a variety of theoretical perspectives and frameworks. Over the past quarter-century, researchers have examined the impact of this diversity and devised strategies for navigating the multitude of theories in mathematics education. This includes the development of approaches for networking theories and recognizing the complementary nature of various theories.

This Topic Study Group seeks to build upon and extend previous work carried out at international conferences, including previous ICMEs. It aims to encourage reflection on existing theoretical approaches and promote the dialogue among theories, while also exploring new developments in response to expanding educational challenges.

Specific objectives for this Topic Study Group include:

1. Expanding discussions on theory building and networking in mathematics education;
2. Investigating the role and status of theory as a research tool and an object of research, and the critical theoretical reflection needed to foster advancements in the field;
3. Developing theories for addressing fundamental questions and emerging issues in mathematics education; and
4. Discussing and developing (meta-)theoretical perspectives to further advance the field of mathematics education.

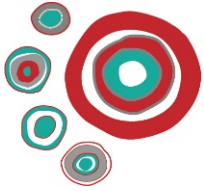
## Areas of interest

Topic Study Group 5.9 welcomes paper and poster proposals addressing issues such as:

- Clarifying the characteristics of a theoretical contribution and its advancements in the field;
- Examining the role of theory as a research tool and investigating the role of theory as an object of research;
- Exploring principles and strategies for theory development, advancement, and networking;
- Analysing theories and their advancements in addressing emerging questions (e.g., AI-supported mathematics learning, semiotic resources and technology, etc.) and critical issues in mathematics education (e.g., diversity, inclusive education, equity, and social justice); and
- Discussing and developing meta-perspectival theories or meta-theoretical approaches in mathematics education.

We welcome papers and posters relevant to the overall focus of the group and encourage submissions that address one or several of the outlined areas of interest. Submissions that go beyond these areas will also be considered.





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We expect participants to engage in the review process prior to the conference and will nominate respondents for presentations to facilitate deeper levels of critical discussion during the conference.

### **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.

