KOREA 2025 EARCOME9

The 9th ICMI-East Asia Regional Conference on Mathematics Education

JUL. 18 FRI - 22 TUE, 2025

Seoul National University, Siheung Campus
Korea

Call for Proposals

TSG: The Essence of Mathematics Education in Learning and Cognition

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Overview

What does mathematics learning look like in the era of digital transformation and Artificial Intelligence (AI)? What does it mean to know mathematics in this fast-changing world? How do students learn mathematics in an AI-driven educational landscape? In a highly volatile, uncertain, complex, and ambiguous (VUCA) world, the characteristics of our mathematics learners and the cognitive processes underpinning learning will also evolve. While it may be clear that mathematics education must go beyond developing procedural skills to emphasize conceptual understanding, problem-solving skills, critical thinking, adaptive thinking, and other 21st century competencies, how students learn and develop these competencies remains an open question.

We welcome contributions on research related to learning and cognition in the era of digital transformation and AI. Submissions of proposals should address research, theoretical perspectives, methodological lenses, systematic reviews, or innovative ideas related to learning and cognition in different domains of mathematics. These can include (but not restricted to):

In the **context of digital transformation and AI**,

1. what are some of theoretical perspectives that can be used to frame mathematical learning and cognition?
2. what are the kinds of mathematical knowledge, competencies, and dispositions learners need to develop?
3. how do/can/should learners develop conceptual understanding and/or other mathematical competencies and/or dispositions?
4. what is the role of metacognition in mathematics learning?
5. how does creative and/or divergent thinking assist the learner in establishing a conceptual understanding of mathematics?
6. what kinds of research methodologies can be used to explore mathematical learning and cognition in-depth?
7. what is the role of mathematical discourse, collaborative learning, and social interactions in supporting mathematics learning and development?
8. how can the initial/continuing teacher education courses prepare/develop competencies of teachers to deepen the understanding of the essence of Mathematics for learning and cognition?
9. what is the role of teachers as mediators of Mathematics learning and the student's development of cognition?

10. how can teachers mediate mathematics learning?
11. where can (and how does) mathematics learning take place beyond the confines of physical classrooms?

We look forward to your active participation in this TSG.

Timeline

- TSG full paper submission: **February 1, 2025**
- Notification of acceptance & Feedback to authors: **March 31, 2025**
- Revision deadline: **April 30, 2025**

Submission Guidelines

- Topic Study Groups should be no more than 4 pages.
- All abstracts or papers should use the template for EARCOME 9. Please visit the conference website, which provides the template and the steps for submission.
  https://www.earcome9.org/abstract/01.html?sMenu=01
- For any questions about this TSG, please reach out to us via email.

Thank you very much!