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The current issue features articles addressing four main themes: student learning obstacles, realistic mathematics education, technology-enriched learning, and teacher training and development. By bringing research from Croatia, Hungary, Indonesia, Malaysia, Morocco, South Africa, Türkiye, the United States, and Vietnam, the articles offer diverse perspectives that transcend one-size-fits-all solutions and enrich the global discourse in mathematics education. Specifically, they present strategies for leveraging students' thinking to inform instructional design, designing effective technology learning environments, and promoting high-quality teaching practices. Together, this issue provides valuable insights across the educational ecosystem that directly inform the work of teachers, researchers, and policymakers. We hope these papers serve as a catalyst for future research and classroom innovation, ultimately fostering a more vibrant mathematics education landscape internationally.

The editorial team extends its gratitude to all authors for their valuable contributions to the *Mathematics Teaching–Research Journal*. Their work is essential in cultivating meaningful dialogue between mathematics education research and classroom practice.

Learning Obstacles and Trajectories

Learning trajectories provide a roadmap for designing instruction that builds on students' mathematical strengths. Anticipating learning obstacles and predicting learning paths allows teachers to tailor instruction to students' evolving mathematical thinking. The first three studies explore

students' learning obstacles from a phenomenology perspective and offer instructional strategies for addressing common learning obstacles of fractions, variables, and inequalities. **Andriatna, Sujadi, Kurniawati, Wulandari, and Nursanti** examine Indonesian junior high school students' learning obstacles of fractions and share a lesson design based on the 5Es model to address the identified ontogenic and epistemological obstacles. **Fitria, Susiswo, and Susanto** identify cognitive disconnect as a key obstacle in middle school students' understanding of variables and emphasize that instruction should deliberately link arithmetic and algebra through gradual representations and systematic scaffolding to bridge cognitive disconnection. **Siagian's** analysis of students' concept images in learning inequalities highlights the need to bridge procedural proficiency and conceptual understanding. Next, two studies integrated the RME approach to articulate hypothetical learning trajectories of learning division and developing trigonometric ratios concepts. **Duyen and Loc**'s study presents a hypothetical learning trajectory of division and a four-lesson intervention to develop first-grade students' robust understanding of partitive and quotitive division. **Andiani, Darhim, and Nurlaelah**'s study demonstrates that contextualized activities informed by a hypothetical learning trajectory enhance high school students' understanding of trigonometric ratios and facilitate their transfer to real-world contexts.

Technology-enriched Learning

These technology-focused studies demonstrate that when integrated effectively, digital tools and instructional innovations have a transformative impact on mathematics learning by developing deeper conceptual understanding, fostering student engagement, and providing personalized learning experiences. **Sugiman, Maulyda, and Rahmawati** document the process of designing an augmented reality-based and learning tool based on the Didactical Technology Design framework and highlight its potential in creating interactive learning environments to improve primary students' numeracy skills. **Nugroho, Arliani, and Sugiman** demonstrate that integrating Realistic Mathematics Education into instructional websites (RME-Web) can enhance junior high students' computational thinking skills more effectively compared to traditional RME or direct-learning approaches. **Uyun, Mailizar, and Elizar** report that the flipped classroom model enhances Grade 11 students' mathematics learning outcomes and overall engagement, though behavioral engagement showed no significant difference. The two studies on GeoGebra by **Matić and Bošnjak** and **Torma, Kiss, and Waldhauser** highlight how the tool can enhance students' understanding through accessible visualization representations and sustained engagement. Last but not least, **Kartika and Clark** examine the argumentation structures created by generative AI and by undergraduate students using the Claim-Evidence-Reasoning (CER) framework. The findings indicate that generative AI tends to rely on pattern recognition and naïve empiricism rather than rigorous logical reasoning. Accordingly, they advocate for positioning AI as a pedagogical supporting tool in the classrooms.

Teacher Training and Development

These four studies shed light on advancing the preparation of pre-service teachers and in-service mathematics teachers' teaching practice. **Demirci, Akkoç, and Çeziktürk** develop a Techno-pedagogical integration matrix to examine how pre-service teachers use the 5E model to plan technology-enhanced lessons. The study offers a unique case of integrating the SMAR model and the 5E model to guide effective use of technology in mathematics teaching. **Acar and Bozkurt** investigate pre-service teachers' awareness of Sustainable Development Goals and emphasize the importance of equipping future educators with knowledge and strategies to foster sustainability consciousness in students. **Gholami** reports a lesson study grounded in a collaborative, constructivist-based approach to teacher professional development. The findings highlight the value of reflective, community-based approaches in fostering effective mathematics teaching and learning. Drawing on Casa et. al's four types of mathematical writing, **Ngoako and Machaba** analyze a teacher's writing practices in a 10th-grade classroom and reveal the need to integrate various writing strategies and opportunities to enhance students' mathematics learning.

This issue concludes with two articles that focus on students' reasoning and emotions in mathematics learning. **Nhiry, Hanini, and Abouhanifa** present a student work analysis of inductive reasoning. They developed a set of criteria to assess Moroccan secondary school students' inductive reasoning skills and suggest that instruction should include exploratory tasks, conjecture-making opportunities, and pattern-focused discussions to support high-level inductive reasoning. **Suparman, Juandi, Turmudi, Martadiputra, and Diana** show that students' achievement emotions in doing some mathematics-related activities vary by gender, major, school type, or age. The study reveals the need for providing differentiated interventions to support stable emotional achievement in mathematics learning.