Editorial of Volume 12,Issue 3, Year 2025 of the Journal Teaching Mathematics in Debate

We begin this third issue of 2025 of RMD by paying posthumous tribute to the mathematical researcher, philosopher, and mathematics educator Michael Friederich Otte, who passed away on December 16, 2025. He leaves his mark on International Mathematics Education. His presence in the Graduate Program in Mathematics Education at PUC-SP in the 2000s broadened perspectives on research directions in this area. Gratitude. Our condolences to Otte's family and to his numerous students throughout the world, including Brazil. Our role is to continue the work of so many for the development and meaningful learning of Mathematics.

From this perspective, we open this issue with a guest article by French researchers Ghislaine Gueudet and Luc Trouche, authors of theories in Mathematics Didactics that have been referenced by researchers worldwide, and in particular, in Brazil. Added to this article are nineteen other articles by Brazilian authors, representing a diversity of themes reflecting different perspectives on research in Brazilian Mathematics Education. We now proceed to present these articles.

The article by **Gueudet and Trouche** is presented in English and Portuguese, and its title is expressed by the question: ***Towards new documentation systems for mathematics teachers?*** The answer, in turn, is seminal for researchers who use or intend to use the theory of the Documentary Approach to Didactics. The 2nd article was entitled ***A praxeological analysis of tasks on oblique projectile motion in physics and mathematics textbooks: possibilities for interdisciplinarity***, and is authored by **Venhoven Martins and Lutaif Bianchini**. As a result, they conclude that, even in tasks of the same type involving oblique projectile motion, the analyzed books employed distinct techniques, technologies, and theories, in which it was not possible to articulate knowledge from one area to another. ***Teaching and learning proportionality: some reflections from a systematic mapping*** was the 3th article, authored by ***Santos Rodrigues and Silva Feitosa***. They highlight trends regarding learning theories on the subject, as well as allowing the emergence of categories of obstacles and difficulties in teaching and learning the topic. **Reis Ferraz et al**. are the authors of the 4th article, titled ***Mathematical Anxiety: a bibliometric analysis of scientific production.*** The results obtained from the

investigation indicated that greater productivity is related to affiliations in the US, whose global citation index is also higher. **Bordinhão Prates and Bisognin** wrote the 5th article, ***STEAM Methodological Approach: A Systematic Literature Review.*** The authors conclude that the lack of Brazilian publications on this topic is a highlight, as is the absence of a significant number of studies using the STEAM approach, where Mathematics is the main focus. **Pestana dos Santos** wrote the 6th article, in which he investigates ***Mathematics Education in Migration Contexts: Challenges and Possibilities for an Inclusive Practice***. The article concludes by suggesting the implementation of intercultural mathematics workshops, situated teacher training, and welcoming language policies as curricular transformation practices aimed at equity and epistemic plurality. ***A study on the choice of operation in arithmetic and algebraic additive problem***s composed of natural and decimal numbers is the title of the 7th article by **Beirigo Lopes et al**. The data obtained indicated high percentages of correct operation selection in additive problems with decimal numbers when the correct operation selection occurred in additive problems with natural numbers. Furthermore, it was observed that the students' performance in arithmetic additive problems was superior to that observed in solving algebraic problems. The 8th article, titled ***Laser cutter in the physical construction of mathematical objects: possibilities permeated by the use of MakerMAT***, was written by **Sousa Gondim et al**. This article discussed a didactic sequence for teaching mathematics using a laser cutter, which consisted of implementing a MakerMAT activity for planning geometric solids, applied in the classroom to a 5th-grade class in elementary school. The 9th article, ***Teaching Multiplication in the Early Years in Light of the History of Mathematics*****,** is by **Donizete Moraes.** His research indicated that using the History of Mathematics in teaching multiplication can contribute to students' conceptual development, expand their repertoire of problem-solving strategies, and promote more inclusive and meaningful learning. The 10th article, **"*Didactic-Pedagogical Contributions of Continuing Teacher Training for the Development of Probabilistic and Statistical Thinking*,"** is authored by **Assis and Oliveira Groenwald.** It is a study conducted in a municipal public school system in the state of Paraíba, with teachers working in the early years of schooling, focusing on strengthening mathematical knowledge, especially Probability and Statistics. The 11th article, titled ***Analysis of the use of Scratch in mathematics teaching processes with maker activities,*** is written by **Alves da Costa et al**. The conclusion is that the teachers surveyed recognized Scratch as a pedagogical resource that significantly contributes to the teaching and learning

processes of mathematics in maker contexts. **Vieira Pereira et al.** wrote the 12th article, titled ***Bachelor's Degree in Mathematics: The Importance of Using Active Methodologies in the School Context.*** Drawing on the theoretical contributions of Grando (2004), Lorenzato (2012), Moreira (2018), and Brito and Sant'Ana (2020), among others, they reaffirm the importance of using active methodologies to achieve meaningful learning**.** The 13th article in this issue was titled ***GeoGebra in Mathematics Education: an analysis based on a systematic literature review (2014-2023)*** by **Santiago and Santos**. For this research, works from four digital repositories were consulted: CAPES Journals, the Journal of the International GeoGebra Institute of São Paulo, Unión, and SciELO. ***An analysis of Canva in the mathematics teaching-learning process*** is the 14th article by ***Gomes Marques Filho et al***., highlighting that integrating the tool into pedagogical practices requires planning, adequate teacher training, and a change in school culture that values the use of digital technologies in education**.** The 15th article is authored by **Alvez Souza et al.** and titled ***Geometric Magic Squares***. According to them, the objective of this investigation is to explore the characteristics of geometric magic squares of order 3, investigating their history, properties, and how these squares can be introduced into basic education classrooms to promote the learning of mathematical concepts in a meaningful and engaging way. ***Investigating the Pythagorean Theorem: an experiential report using manipulable materials*** is the title of the 16th article b***y*** **Assis Bulhões et al.** The research involved a workshop consisting of an exploratory task, which also uses manipulable materials. This task was designed to be carried out in a 9th-grade class at a municipal school, for which a teacher from the institution served as supervisor of our activities. **Frutuoso da Silva and Alcântara Matos** wrote the 17th article, titled ***Teacher and Student Perspectives on Differential and Integral Calculus: A Systematic Literature Review*.** In it, they question the roles of teachers and students from the perspective of Differential and Integral Calculus, problematize prominent formative aspects aligned with difficulties, and suggest approaches to teaching and learning processes in the context of emerging education. **Miott et al.,** in their 18th article, ***Financial Education in Paraná: Identification and Analysis of Principles and Curricular Components,*** aim to identify and analyze the principles and components present in the state documents that structure the Financial Education curriculum in Basic Education in Paraná. The 19th article is authored by **Velozo de Castro.** In her article, this author addresses the question: what relationships manifest between the modeling practice of a pre-service teacher and her metacognitive experiences? To this end, she researched

the topic and expressed her studies in the article entitled ***Metacognitive experiences manifested in the mathematical modeling practice of a teacher.*** **Lima et al.** presented article 20, titled ***Continuing education for educators who teach mathematics in the early years of elementary school.*** They contribute to Brazilian mathematics education by indicating that, during these training processes, teachers have the opportunity to reassess their approaches, identify areas for improvement, and adjust their pedagogical practices according to the needs of their students.

We conclude this issue by thanking the contributors to EMD and wishing for a next year with fruitful research in favor of mathematics education that promotes the learning of young Brazilians.

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