

Editorial

In this issue

This issue contains three articles, all written in English. The first article is a research review by Kim André Stavenæs Refvik and Annette Hessen Bjerke, *Computational thinking as a tool in primary and secondary mathematical problem solving: a literature review*. The authors set out to increase the understanding of the role of computational thinking in mathematics problem solving. A systematic search was done in four databases which generated 527 papers. By use of elaborated inclusion and exclusion criteria the number of papers was finally reduced to seven papers. The analysis of these research papers show that it is possible and at times beneficial to include computational thinking in mathematics problem solving. They conclude that more research is needed to see whether simply including computational thinking and its programming tools enhances students' problem solving skills in mathematics.

The second article, *Methods and key findings in research on conversations in early years mathematics: a review of the literature*, by Astrid Hågensen Kleven is also a research review. This qualitative systematic review aims to provide insight into applied research methods and key findings in early years mathematical communication research. This literature review focuses on newly published research reporting on young pupils' (age 5 to 10) mathematical communication and reasoning. Reporting on 13 studies published between 2016 and 2020, the review found video-recordings as a favourable method for data collection, given its ability to capture verbal and non-verbal communication. Another finding was that implementing classroom norms or rules for conversation could be useful for children learning to communicate productively. The review also reports on several tools for teachers to improve practice related to conversations and mathematical reasoning.

In problem solving different aspects of students' difficulties may be interrelated. The challenges in a task are related to the student solving the task, in the sense that a challenge depends on his or her prior experiences and understanding. In the third article, *Creative and conceptual challenges in mathematical problem solving*, Jonas Jäder contributes to our understanding of mathematical problem solving by distinguishing and characterizing the creative and conceptual challenges students

encounter when solving mathematical problems. The article contributes to constructive discussions of students' opportunities to learn through mathematical problem solving, as well as opens up for new studies. This is done through the development of an analytic framework consisting of definitions and a method of analysis, which makes it possible to capture the challenges in students' work with mathematical problems.

The Editors

Thematic issue of NOMAD 2024

Call for papers

Mathematics teachers' professional identities

Teachers' professional identities has become a prominent field of research over the last two decades, and the scholarly interest is still booming, both in mathematics education and beyond. Studies in this field supplement other research on and with teachers as they generally move beyond purely cognitive perspectives on teachers and teaching and adopt a more holistic, social, and participatory theoretical stance. One aspect of this is to understand how prospective or practising teachers contribute to lives in schools and classrooms in view of cultural and social demands and affordances; another is to consider the character and development of identities as they relate to teachers' participation in teacher education or professional development programmes. Irrespective of which of these interests dominate a particular study, identity research moves beyond cognitive configurations such as knowledge and beliefs when seeking to understand teaching and teacher development.

In spite of the common interest in taking social and societal aspects into account, there is still little agreement in identity research about what theoretical frameworks to use and about a definition of the construct of identity itself. Further, the concept of identity is generally difficult to operationalize and to handle methodologically.

The description above suggests that research on mathematics teachers' professional identities is a flourishing field, but that many issues are still unresolved, not least those pertaining to the theoretical and methodological challenges involved. For this special issue we invite colleagues in mathematics education to present new empirical findings from studies of mathematics teachers' professional identities. This includes studies of and with teachers at all stages of their professional career and for all educational levels. These studies may use a variety of different frameworks and methodologies, and the special issue intends to fuel the further discussion of their respective advantages and disadvantages.

Papers submitted for this special issue will be reviewed by at least two other researchers through a double-blind, peer review process in order

to meet the usual standards of NOMAD (<http://ncm.gu.se/5978-2>). Authors are expected to participate in the review process by reviewing other contributions.

Authors who wish to contribute to this issue are invited to send a brief outline of the intended paper, in the form of an abstract, to Jeppe Skott (jeppe.skott@lnu.se) no later than **December 15, 2022**. If the abstract is accepted, the deadline for full papers is **April 30, 2023**.

Guest editors of this special issue

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