Editorial

This issue contains three research articles that address different aspects of mathematics education, spanning teacher education, early number learning, and the use of digital technology in mathematics classrooms. Together, the articles highlight the importance of teaching practices, learning opportunities and the tools through which mathematical knowledge is developed and communicated. They offer insights into how prospective teachers develop their professional understanding, how young children are given opportunities to learn about numbers, and how teachers evaluate the possibilities and limitations of digital applications in mathematics teaching. On to presenting this issue's three articles:

In the issue's first article, Kongshavn explores how preservice teachers negotiate roles and responsibilities when learning to teach mathematics through a proof-based teaching approach. The study follows groups of preservice teachers in a university course on algebra and number theory, where they take turns as "teachers-of-the-week", planning and conducting lessons for their peers focused on explaining and justifying mathematical results. Through an analysis of collective reflections before and after teaching, three main themes emerge: priming students for proving by establishing a shared toolbox of mathematical knowledge, facilitating student-centred proving processes, and orchestrating whole-class presentations of explanatory proofs. The findings show how the preservice teachers gradually develop an understanding of the delicate balance between supporting students' independent reasoning and intervening when necessary to ensure mathematical understanding. The study highlights the potential of peer teaching and collective reflection as practice-based approaches in teacher education, enabling prospective teachers to explore and negotiate the roles and responsibilities involved in proof-based teaching.

In the second article, Alkhede, Björklund and Kullberg investigate how the number track is used to teach ordinality to six-year-old children in Swedish preschool classes. Drawing on observations from 95 classrooms, the authors identify 52 teaching episodes in which the number track is used, and analyse these through the perspective of variation theory. The analysis identifies three main ways of using the number track: linking number symbols to number words in a sequence, connecting quantities

to number words and symbols, and exploring the position of a specific number in a sequence. The findings show that the number track is primarily used to arrange different representations of numbers in sequence, while opportunities to explore broader relationships between numbers are less prominent. The authors demonstrate, however, that the number track has considerable potential for supporting children's understanding of ordinality beyond simply knowing the order of numbers. In particular, creating variation through contrasts in number sequences and connecting verbal and visual representations can make important aspects of number relationships visible. The study provides valuable insights into the complexity of early number learning and the pedagogical opportunities offered by teaching artefacts.

In the final article, Vethe examines how Artefact-Centric Activity Theory (ACAT) can be used as an analytical framework for understanding teachers' evaluations of educational app use in mathematics classrooms. Drawing on semi-structured interviews with two Norwegian third-grade teachers, the study explores how ACAT can help identify the possibilities and limitations associated with app-mediated mathematical activity. The framework makes it possible to analyse relationships between mathematical content, app design, students' activity and classroom participation. The findings illustrate how features such as immediate feedback, progression systems and rewards can motivate students and support practice, but may also encourage guessing, prioritise speed over reflection, or restrict opportunities to engage deeply with mathematical ideas. The teachers also describe how app use can facilitate peer support while sometimes limiting teachers' opportunities to observe students' mathematical thinking. The article demonstrates the value of ACAT not merely as a tool for evaluating individual apps, but as a relational framework for analysing how app design, mathematical content and classroom interaction influence one another.

The editors