

ZDM Special Issue Call for Papers
Moving Beyond Small-Scale Studies in Algebra Education:
Scaling up Research and Translation
Issue 3 in 2028

Rationale

Algebra has been, and continues to be, a significant focus of mathematics education research. In the past decade alone, for example, there have been several algebra-focused review chapters and journal issues, including one that identified more than 1,800 articles addressing mathematics education research on algebra in the past two decades (Veith et al., 2023). Yet, despite years of scholarly attention on algebra, many students continue to struggle in learning algebra, and its gatekeeper role continues to be manifested in schools as well as referenced in the literature.

The majority of school algebra research consists of small-scale studies that focus on a variety of well-researched and often discrete topics (e.g., equal sign, functions, representations) in localized educational settings. Unquestionably, these small-scale studies have made significant contributions and continue to be important as they often provide new insights into these topics. However, the field now faces the challenge of building on these insights toward more cumulative, robust, and consequential forms of knowledge. This challenge is especially urgent in algebra education because algebra is cumulative, transitional, and consequential: students' opportunities to learn algebra are shaped by how algebraic ideas develop across grades, how they are represented in curriculum and textbooks, how teachers are supported to enact them, and how access to powerful algebraic ideas is distributed across diverse learner groups and educational systems. Given this need, it is surprising how few algebra-related research studies on scaled-up interventions (including impact, replication, and implementation studies) or on scaled-up translations of research to practice are conducted or are reported in the literature. Such algebra education research is critical to building a more cumulative, comprehensive, and consequential knowledge base as well as to implementing more widely promising evidence-based innovations.

In this special issue, we use “scaling” in a multidimensional sense following Coburn (2003). Scaling is not limited to increasing the number of participants, classrooms, schools, or research sites. We welcome papers that address one or more forms of scale, including (a) empirical scale (e.g., larger samples, replications, or extensions of prior studies); (b) contextual scale (e.g., research conducted across countries, curricula, grade bands, or policy environments); (c) implementation scale (e.g., the uptake, adaptation, sustainability, and ownership of research-based innovations in schools, teacher education, curriculum, textbooks, assessment, or policy); and (d) equity scale (e.g., examining whether and how the benefits of algebra education research extend to diverse learner groups and reduce persistent inequities in access to algebra). In this sense, scaling up algebra education research involves not only reaching more students or settings, but also deepening, sustaining, and translating what the field has learned into consequential opportunities to learn algebra.

The authors for this Special Issue should reflect on one or more of the following questions:

- What form(s) of scale does the paper address—empirical, contextual, implementation, equity-related, or another form of scale?

- What is known robustly, and what remains uncertain?
- How has the research expanded the scope, clarified the effectiveness conditions, or strengthened the robustness of prior findings?
- What would be needed for this research (or research, more generally) to be replicated, scaled, sustained, or translated across settings?
- What conditions support or constrain wider and sustainable implementation?
- For whom does this work seem to be effective, and under what conditions?
- How does the work address equity in access to algebraic ideas, participation in algebra learning, or long-term opportunities to learn mathematics?
- What are the implications for curriculum, textbooks, teacher education, or policy?
- What is required in the school algebra ecosystem to build the needed infrastructure, capacity, and expertise to more widely implement and sustain promising evidence-based innovations?

Open Call Procedure

Prospective authors should submit by email an extended abstract of no more than 250 words (including references) of their manuscript to the guest editors: Eric Knuth (ejknuth@wisc.edu), JeongSuk Pang (jeongsuk@knue.ac.kr), and Ana Stephens (acstephens@wisc.edu) by 30 September 2026.

The extended abstract should include the rationale, the paper's central argument or research questions, the type of contribution being proposed (e.g., empirical paper), and its relevance to the aims of the special issue. For empirical papers, authors should describe the methodology (including sample size and participants) and findings or preliminary results. For theoretical, review, design, or implementation papers, authors should describe the conceptual framework, evidence base, cases, or arguments on which the paper will build. Given the international scope of ZDM, we especially welcome contributions that examine algebra education research, scaling, and translation across diverse national, regional, curricular, and policy contexts. Authors should explicitly indicate which dimension(s) of scaling their proposed paper addresses and how the paper contributes to building a more cumulative, robust, sustainable, or equitable knowledge base in algebra education.

If authors have questions regarding the appropriateness of manuscripts for acceptance in the special issue, they should contact the guest editors prior to abstract submission. The guest editors will select the abstracts for the special issue based on their scientific quality and fit with the special issue focus and will inform the authors about their decision. There is no guarantee that all submitted abstracts or all submitted papers will be accepted.

Successful authors need to submit full manuscripts through the Editorial Manager of ZDM in March 2027. Manuscript submissions need to be in line with the ZDM's Author Guidelines. All manuscripts will be reviewed by the special issue guest editors and special issue authors. Final editorial decisions on all manuscripts will be made by the handling editor assigned by the ZDM editor-in-chief.

References

- Coburn, C. E. (2003) Rethinking scale: Moving beyond numbers to deep and lasting change. *Educational Researcher*, 32(6), 3–12.
- Veith, J. M., Beste, M. L., Kindervater, M., Krause, M., Straulino, M., Greinert, F., & Bitzenbauer, P. (2023) Mathematics education research on algebra over the last two decades: quo vadis?. *Frontiers in Education*, 8, 1211920.