Do Paradigms Matter in Mathematics Education Research?

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Education as an interdisciplinary field draws on and adapts methodologies and findings from within educational research as well as a broad range of related fields. Mathematics education research values outcomes from different research perspectives and paradigms as they provide opportunities for debate and to enrich our understanding of findings within mathematics education research. There is recent pressure, however, to privilege research findings about teaching and learning in school mathematics that have been conducted in other fields; as a source of theoretical and practical guidance, these findings often neglect or dispute research conducted in mathematics education (cf. MERGA, 2023; 2025). This misalignment of findings has created tensions when policymakers have accepted findings about mathematics education conducted by those outside the field, in preference to findings within mathematics education research. This presentation discusses a small personal exploratory study with an aim to better understand how findings about the teaching and learning of mathematics—promoted in a discipline outside of education—could come to conclusions that so strongly contrasted with findings within mathematics education research.

The presentation will first discuss a pilot exercise that observed the methodology and subsequent claims made in an article published in a high-ranking journal in psychology about whether it is best to teach content before problem-solving in mathematics or vice versa. A subsequent exploratory analysis was carried out based on this pilot exercise to respond to the research question, *What kinds of methodologies and evidence are used in psychology to substantiate claims about teaching and learning in mathematics education?* Observations from the pilot exercise were used to create criteria to select a set of articles published in 2025 about the teaching of mathematics obtained from the APA Psych Info database. The analysis examined the methodological choices, evidence and claims made in these articles about mathematics education.

The findings were inconclusive and on their own were not meant to be generalisable, but insights from the analysis provided a reminder about the difference paradigms and disciplines can make in mathematics education research. That is, along with the findings, one must understand the paradigms, methodologies and communities within which research is situated to be wise in how research can be adopted or adapted to mathematics classrooms. The conclusion discusses implications for the mathematics education community and why attending to paradigms is so critical at the time we are in right now.

References

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