

Effective Pedagogies in Mathematics Education: Implications for Initial Teacher Education

Rosalie Miller
Flinders University
 rosalie.miller@flinders.edu.au

Jill Fielding
University of New England
 jill.fielding@une.edu.au

Bridgeen Pritchard
University of Wollongong
 brpitchard@uow.edu.au

Currently we find ourselves in turbulent waters within the context of mathematics education research and in debates about current policy, curriculum, and practice reform. In particular, there are ongoing tensions in Australia in the field of Initial Teacher Education due to the mandated inclusion of core content in ITE programs. Through a plenary panel including Greg Oates, Margaret Marshman and Emily Ross we seek to explore the future implications for mathematics education posed by this mandated core content for ITE programs.

The Teacher Education Expert Panel (TEEP) discussion paper made recommendations for reforms to Initial Teacher Education (ITE) Programs (Department of Education, 2023). One recommendation related to mandating core content to be taught in ITE programs, with one area of core content being effective pedagogical practice.

MERGA published a response to the TEEP Discussion Paper outlining a number of concerns related to mathematics education for ITE programs. Concerns included privileging a narrow teaching approach, and drawing upon a narrow evidence base, with a heavy reliance on a single area of research, that of cognitive science. Deuchar (2025) echoed the concern that the mandated core content will result in a narrowing of pedagogical possibilities available to the teachers of the future.

Hubbard, Russo, Livy, and Sullivan (2026) suggest that in addition to student performance, effective mathematics pedagogy needs to consider affective and dispositional elements of mathematics learning; they highlight the value of pedagogical approaches that consider student sense-making and focus on the learning process rather than only student output.

The MERGA Special Working Group for Effective Pedagogies in Mathematics invites you to this SWG meeting where we will have a plenary panel, including Emily Ross, Margaret Marshman and Greg Oates to discuss:

- What tensions are present in ITE programs in relation to effective mathematics pedagogies and mandated core content required for accreditation?
- What implications does the mandated core content pose for future mathematics teaching and learning?

References

- Department of Education. (2023). *Teacher Education Expert Panel Discussion Paper*. Retrieved from <https://www.education.gov.au/quality-initial-teacher-education-review/resources/teacher-education-expert-panel-discussion-paper>
- Deuchar, A. (2025). Policy makers as experts and teachers in need of reform: a critique of 'evidence-based' reforms of initial teacher education in Australia. *Australian educational researcher*, 52(2), 1163-1180. doi:10.1007/s13384-024-00757-6
- Hubbard, J., Russo, J., Livy, S., & Sullivan, P. (2026). Optimizing learning conditions for self-determination in primary mathematics education: A theoretical perspective. *Mathematics education research journal*. doi:10.1007/s13394-025-00555-y

(2026). In N. Berger, M. Thompson, J. Ley & C. Wilsmore (Eds.), *Beyond boundaries: Strengthening futures in mathematics education. Proceedings of the 48th annual conference of the Mathematics Education Research Group of Australasia*, Sydney (p. 476). MERGA.