

*Editorial*

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## Transforming Mathematics Teaching Practices to Support Meaningful Mathematics Learning

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The papers in this volume of *Mathematics Teacher Education and Development* examine ideas and professional learning directed at developing teachers' knowledge, beliefs and practices as they pertain to supporting meaningful mathematics learning. In particular, the four papers have a focus on transforming mathematics teaching practices through pre-service or in-service programs. The programs aim to provide a range of experiences and learning opportunities for teachers, including: learning mathematics content, experiencing meaningful mathematics learning for themselves, reflecting upon and critically analysing their own and students' mathematics learning, collaborating with colleagues, developing professional confidence as a mathematics teacher, and developing curriculum planning and teaching skills that align with meaningful constructivist mathematics education practices.

The paper by Lomas reports on a study with pre-service primary teachers that examined the pre-service teachers' views and experiences of the mathematics education practices of their university program. This questionnaire based research used the *Questionnaire on Teacher Interaction (QTI)* and the *Constructivist Learning Environment Survey (CLES)*. There was strong evidence that the pre-service teachers viewed their lecturers' practices to be aligned with socio-cultural view of constructivism. However, there was also evidence that the lecturers' practices were not promoting a critical views of constructivism. Since an aim of the pre-service program was to foster a transformative philosophy of mathematics learning and teaching, and there was evidence that this was not occurring to the degree desired, the discussion in this paper identifies approaches to pre-service education that might better address a transformative agenda.

The Chamberlin paper was also survey based, but in a more qualitative way, using written reflection responses to a range of questions concerning teachers' mathematics learning experiences in a mathematics professional development program. The participants were middle school teachers. One goal of the professional development program was for teachers to experience for themselves exploring and making sense of mathematics, so that they could then incorporate similar activities and experiences into their own teaching practices. The study found evidence that reflecting on personal learning experiences fostered teachers' valuing of learning mathematics with understanding, along with a commitment to incorporate teaching and learning mathematics with understanding into their classrooms.

The Frid and Sparrow paper goes beyond the immediate experiences of pre-service teachers in their university programs, into examining the reported practices of primary and early childhood teachers in their beginning years as teachers. The teachers' pre-service mathematics education program had emphasised the development of capacities to implement non-traditional mathematics curricula that aim to support meaningful mathematics learning. The teachers indicated they were implementing constructivist-oriented mathematics curricula, and in many cases were serving as curriculum leaders in mathematics. The subsequent discussion in the paper examines how aspects of the teachers' pre-service program appeared as influential in developing their teaching practices as transformative of mathematics learning and teaching.

Finally, the paper by Boyd and Bargerhuff offers a very different perspective on the preparation and professional learning of mathematics teachers. It is not a report of an empirical study. Rather, it is a literature review and analysis of how the field of special education overlaps with that of mathematics education in ways that can provide insight into preparing both mathematics and special education teachers for working with students with a wide range of mathematics learning needs.

These papers as a collection remind us of the breadth, depth and complexity of providing effective professional learning opportunities for pre-service and in-service mathematics teachers. They highlight the ongoing challenges for teacher educators in developing the professional knowledge and skills teachers need to be able to transform mathematics learning and teaching.

## Tribute to Terry Wood

Merrilyn Goos

It is with great sadness that we inform all MERGA members of the death of Terry Wood after a long and courageous fight against pancreatic cancer. She was a much admired contributor to the Australasian mathematics education research community, and a quietly supportive mentor to many MERGA members. Terry has spent the past two years with her children, grandchildren, and close friends living every minute to the fullest. During that time Terry no longer attended research conferences, and MERGA members in Australia and New Zealand have asked after her, sent their good wishes, and shared their stories of the inspiration she had been to them and influence she had on their research and teaching.

In 2001/2002 Terry spent a year in Australia visiting David Clarke and analysing the Australian Learners' Perspective Study data at the University of Melbourne. She returned again in 2003 because she had enjoyed working with Australians and New Zealanders and had grown to love the natural beauty of the two countries. She also worked with Macquarie University mathematics education staff who found her 'such an inspiration'. Terry appreciated the Australian sense of humour, and their map reading skills, saying, "I always join the Australians at international conferences because they know how to read the maps so I know we will get to where we want to go".

Terry made many professional contributions to MERGA and our members. She served on the Editorial Board of *Mathematics Teacher Education and Development*, and reviewed manuscripts for MERGA's *Mathematics Education Research Journal*. She was also an invited plenary speaker at the 2002 MERGA conference in Auckland, New Zealand, where she challenged us to think about what it means to teach mathematics 'differently'. On a personal level, Terry supported a number of MERGA members in the early stages of their careers by acting as a mentor, a PhD thesis examiner, and a referee for job applications.

We have lost a much loved colleague and friend to mathematics education in Australasia, but we take comfort in the knowledge that Terry's legacy—intellectual and personal—will live on and continue to influence our research and teaching for the better.