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*Editorial*

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## Initial Teacher Education and Ongoing Professional Learning in Early Childhood Mathematics Education

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It is over 12 years since there was a special issue of the *Mathematics Education Research Journal* (MERJ) on early childhood mathematics education and there has never been a special issue of *Mathematics Teacher Education and Development* (MTED) devoted to preservice and professional learning for teachers in the early childhood years. This is in spite of there being a strong body of research and publication within MERGA and beyond in this level of education. This issue of MTED rectifies this gap.

The initial call for expressions of interest in submitting papers for the special issue was made in October, 2016. The following explanation for the theme of the special issue was provided.

Australia is currently in the midst of an early childhood education and care reform agenda which requires the preparation of many university degree qualified educators. New Zealand has been undergoing similar reforms for some time. Critical decisions need to be made about early childhood mathematics teacher education, in terms of both initial teacher preparation and ongoing professional learning for qualified educators. A key role of these programs in the current reform climate is to promote educator content and pedagogical knowledge in mathematics as a means of providing children with access to high-quality mathematics education programs. This Special Issue will focus on research concerning both initial teacher education and continuing teacher professional development in early childhood mathematics. Research examining the impact of the reform agenda will be particularly encouraged.

The expression of interest process resulted in submission by the due date of thirteen papers with authors from nine countries. These papers were sent out to reviewers who undertook a rigorous peer review process and produced constructive and critical feedback on each paper. The reviews for all papers were evaluated by the editors and it was determined that eight of the author teams would be invited to make the required changes to their papers and to submit a revised version for publication in the Special Issue by September, 2017. Author teams for the other five papers were sent extensive feedback on their papers and have been encouraged to submit revised papers to MTED for further review. Seven of the eight author teams asked to submit revised versions of their papers for the Special Issue managed to do so by the due date. It is these seven papers with authors from six countries which make up the Special Issue.

The collection of papers included in this Special Issue present a range of ways in which the mathematics education practices of early childhood teachers might be enhanced, both in initial teacher education and through ongoing professional learning. Palmér and Björklund examine the impact of participant-oriented professional development with a national teacher network focused on toddler mathematics education. Livy, Downton, and Muir present an example of how teacher educators in university contexts can design tutorials to develop pre-service teachers' breadth and depth of knowledge in mathematical concepts. Helenius, Johansson, Lange, Meaney, and

Wernberg discuss the results of a survey of preschool teachers about their use of online professional development materials and the positive impacts of these for teachers' mathematical knowledge and practices. In a similar vein, Sarama, Clements, and Spitler describe the positive impacts for teachers participating in learning trajectories-based professional development and instruction and examine teachers' descriptions of their self-change in relation to the mathematical capabilities of preschoolers. Bruns, Eichen, and Gasteiger present the results of a pre- and post-test study examining the impact of a competence-oriented continuous professional development course upon teachers' mathematical pedagogical content knowledge. Anderson, Stütz, Cooper, and Nason report on the conceptualisation and implementation of a project to inform the design and implementation of culturally relevant mathematics pedagogy for young Indigenous and low-SES students. Finally, Björklund and Alkhede analyse focus group data and authentic documentation of preschool educators' participation in a professional learning program focused on numbers and counting.

Collectively, the papers in this Special Issue offer advice as to how the mathematics professional learning of both pre-service and in-service teachers can be supported through a range of programs and practices. However, many opportunities for research remain; particularly in relation to the impact of reforms to initial teacher education, mathematics education curricula, and early years educational policy.

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