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Mathematics at the Margins

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Preface

This book provides a positive story about teaching and learning mathematics in schools at the margins. While there are many challenges to overcome for both teachers and students in these contexts, effective learning can occur. Unique to this book, is the large longitudinal sample of students, teachers and Indigenous teacher aides that provide multiple perspectives with regard to the successful teaching and learning of mathematics (Foundation to Year 3). The purpose of sharing the journey of the teachers and students, is to enrich the readers' knowledge as to what quality teaching and learning can look like in mathematics in marginalised contexts. While this study is situated in Australian schools, the findings from the research have much to offer to both teachers and researchers in the international mathematics education community.

RoleM (Representations, oral language and engagement in Mathematics) began as a pilot study in 2008 with a small number of Aboriginal and Torres Strait Island schools. It was designed to bridge the educational gap in mathematics for young Indigenous students. In 2010, RoleM expanded to a 4-year longitudinal study focusing on a cohort of students from their first year of schooling, Foundation through to the completion of Year 3. A total of 16 schools were involved in the study. These schools were considered to be at the highest level of education risk in the Australian context. Over this 4-year period, the RoleM professional development model and the mathematics learning experiences were continually refined and adapted with the aim of maximising the quality of teaching and learning occurring in these contexts.

We wanted to share with readers the knowledge that was accumulated through this research, and contribute to the ongoing conversation about improving the teaching and learning of mathematics at the margins. Thus, the book is structured to tell the journey of the research that occurred over the four years. It presents the context and the frameworks that underpinned the study (Chap. 1) and critiques the international literature pertaining to quality learning and professional development (Chap. 2). Teacher and student data are presented separately (Chaps. 3 and 4) and then discussed together in Chap. 5. Chapter 6 reviews the main findings and

presents implications for practice and research. Finally, the importance of maintaining the momentum and improving sustainable practices for teachers and students in these contexts is presented in Chap. 7. We would like to express our gratitude by thanking Associate Professor Jacqueline Ottman, Associate Professor Roberta Hunter, and Dr. Jodie Hunter who contributed to the final three chapters of the book. The insights and stories they have shared (Canadian and New Zealand perspectives) add great value to better understanding what is needed to improve teaching and learning mathematics in marginalised contexts.

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