

EDITORIAL



Marking 21 years of *Research in Mathematics Education*

This issue of *Research in Mathematics Education* (RME) marks a special point in the history of the journal. As incoming editors (beginning with volume 20), it is our honour to introduce volume 21 to celebrate 21 years of RME.

As noted by the editors of volume 10 (Rowland & Nardi, 2008a), *RME*, an international journal with the explicit aim of being informative and relevant to researchers in the field world-wide, is the official journal of the *British Society for Research into Learning Mathematics* (BSRLM). Volume 10 coincided with the thirtieth anniversary of the formation of the *British Society for the Psychology of Learning Mathematics* (BSPLM), renamed BSRLM in 1985. The BSRLM spirit is at the heart of *RME*. Indeed, the editor of volume 1 (Brown, 1999, p. ii) of the journal wrote about being “excited by the ideas represented [in the first issue] and therefore discussed within the community of researchers and teachers which is BSRLM”. Likewise, the editors of volume 3 (Jones & Morgan, 2001, p. 3) drew attention to how the articles display interest in “a broad range of issues in mathematics education, making use of different theoretical frameworks and methodologies and including both reports of empirical studies and more theoretical contributions”.

The early editions of the journal were published as single volumes (in effect, double issues). This changed with volume 10 when a pattern of two issues per year commenced. Two years later, in 2010, the journal editors (Nardi & Rowland, 2010) announced the journal’s growth to three issues per year, beginning with Volume 13. This established a pattern whereby Issues 1 and 3 of each volume are ‘regular’ issues and Issue 2 is a ‘Special Issue’ (SI) with guest editors.

The first SI was entitled *Deepening engagement in mathematics in pre-university education*, with its introductory article (Wake, 2011) explaining how the SI reported on the outcomes of the TLRP project, a major funded UK research project (see: www.transmaths.org). Subsequent Special Issues, to date, have been entitled *European research in mathematics education* (Hodgen, Nardi, & Rowland, 2012), *Experimental methods in mathematics education research* (Alcock, Gilmore, & Inglis, 2013), *Institutional, sociocultural and discursive approaches to research in university mathematics education* (Nardi, Biza, González-Martín, Gueudet, & Winsløw, 2014), *Mathematics teaching: Tales of the unexpected* (Rowland, Hodgen, & Solomon, 2015), *A discursive approach to the investigation of school mathematics* (Morgan & Sfard, 2016), *Summative Assessment* (Iannone & Jones, 2017), and, most recently, *Early Childhood Mathematics Education* (Black & Norén, 2018).

A feature introduced in Volume 18 was the occasional invited ‘position paper’ written by key researchers in mathematics education, and accompanying invited ‘response paper’ by a suitable respondent (see Hodgen, Simpson, & Solomon, 2016). The first such ‘position paper’ was by Julian Williams and Sophina Choudry (Williams & Choudry, 2016), and the response by Andy Noyes (2016). Subsequently, to date, a ‘position paper’ by Celia Hoyles (2018), with a response from Paul Drijvers (2018), appeared in Volume 20.

As well as original research papers, *RME* has established a strong heritage of informed and critical book reviews, ably handled by the journal’s Book Reviews Editor. This heritage includes single book reviews, as well as thematic reviews across a number of books. An example of the

latter, reviewing three books on mathematics education in mainland China, is Jones (2008), the first book review of any form published in *RME*.

Over the years, *RME* has marked the sad passing of colleagues who made significant and lasting contributions to BSRLM and the wider community in mathematics education, such as Leone Burton (Rowland & Nardi, 2008b), Brian Griffiths (Howson, 2009), and Marilyn Nickson (Nardi & Rowland, 2010). In 2008, following a generous gift made to BSRLM by the family of the late Janet Duffin, a longstanding and active member of the Society, BSRLM instigated the Janet Duffin Award for “what is judged to be the most outstanding research paper (or essay review) published in the Society’s journal, *Research in Mathematics Education* (*RME*), during the preceding calendar year” (Ruthven, 2008, p. 115).

The winner of the Janet Duffin Award for 2008 was Nathalie Sinclair and Violeta Yurita for their paper *To be or to become: How dynamic geometry changes discourse* (Sinclair & Yurita, 2008). Subsequent recipients of the Janet Duffin Award have been Andrew Noyes for his paper *Exploring social patterns of participation in university-entrance level mathematics in England* (Noyes, 2009), Cathy Smith for her paper *Choosing more mathematics: happiness through work?* (Smith, 2010), Tom Lowrie for “*If this was real*: tensions between using genuine artefacts and collaborative learning in mathematics tasks (Lowrie, 2011), Aron Samkoff and colleagues for *On the different ways that mathematicians use diagrams in proof construction* (Samkoff, Lai, & Weber, 2012), Carole Torgerson and colleagues for *Every Child Counts: testing policy effectiveness using a randomised controlled trial, designed, conducted and reported to CONSORT standards* (Torgerson, Wiggins, Torgerson, Ainsworth, & Hewitt, 2013), Rachel Marks for *Educational triage and ability-grouping in primary mathematics: a case-study of the impacts on low-attaining pupils* (Marks, 2014), Christine Howe and colleagues for *Rational Number and Proportional Reasoning in Early Secondary School: Towards Principled Improvement in Mathematics* (Howe et al., 2015), Julian Williams and Sophina Choudry for *Mathematics capital in the educational field: Bourdieu and beyond* (Williams & Choudry, 2016), and Susan Staats for *The poetics of argumentation: the relevance of conversational repetition for two theories of emergent mathematical reasoning* (Staats, 2017).

Amongst the most highly-cited papers to have appeared in *RME* to date is the paper by Brown and colleagues (Brown, Brown, & Bibby, 2008) on reasons given by 16-year-olds in England for not continuing their study of mathematics, and the paper by Hannula (2012) on theoretical approaches for research on mathematics-related affect. The paper by Brown and colleagues (Brown et al., 2008) also features amongst the most downloaded *RME* papers, as does the paper by Gifford and Rockliffe (2012) on the nature of learning difficulties in mathematics and, in particular, the nature and prevalence of dyscalculia.

This issue continues the fine *RME* tradition of highly-original research papers and insightful book reviews. The paper by Al-Murani, Kilhamn, Morgan, and Watson (2019) reports an innovative study of a current issue of considerable UK, and international, interest; that of *variation theory* by which learning is the result of pupils discerning the variation of some aspects of a mathematical idea against a background of invariance. In identifying teachers’ use of variation, and what constitutes suitable patterns of variation and invariance, Al-Murani et al. show how their *dimensions of possible variation* and *range of permissible change* constructs help to explain what learning takes place and why certain difficulties emerge. Zakaryan and Ribeiro (2019), building on the work in *RME* of Carrillo-Yañez et al. (2018), focus on mathematics teachers’ specialised knowledge of rational numbers. They argue that their fine-grained analysis provides a new understanding of teacher knowledge. Through their analysis of a Japanese second grade lesson, Rasmussen and Isoda (2019) shed light on how to foster the development of mathematical thinking in the first grades of elementary school. Macdonald and Wilkins (2019) focus on the development of a young child’s subitising activity and

highlight how the shift from perceptual to conceptual processes involves a change from using subitised perceptual units towards subitised figurative units and subitised motor units. Hilton, Larsen, Wiley, and Fischer (2019) provide a comparative analysis of Open Educational Resources (OER) and commercially-produced resources, examining the impact of both on student standardised test scores in a large-scale study in the US. They report no statistical significance between these two types of resource indicating that free OER could replace commercial resources in ways that might enable the reallocation of funding resources to improve teaching effectiveness. These research articles are complemented by reviews of two recent books; *International perspectives in the teaching and learning of geometry in secondary schools* (Horsman, 2019) and *Mathematics lesson study around the world* (Lewis, 2019), together with the announcements of the Janet Duffin Award for 2016 and for 2017, and the abstracts of research papers presented at the BSRLM Conference held at King's College, London, on Saturday 10 November 2019.

As incoming editors, we are grateful for the efforts of the interim editors (Hodgen et al., 2012) for their support during the hand-over. We are also grateful to the *RME* Book Reviews editor, the BSRLM Proceedings Editor, all members of the *RME* Editorial Board, the *RME* Administrative Assistant, and the production team at the publisher, *Taylor & Francis*, for contributing decisively to ensuring the continuing high quality of the journal. We look forward to the next significant anniversary of the journal!


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