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Powerful pedagogical actions in mathematics education.

Perry, Bob (ed.) et al., Research in mathematics education in Australasia 2008–2011. Rotterdam: Sense Publishers (ISBN 978-94-6091-968-8/pbk; 978-94-6091-969-5/hbk; 978-94-6091-970-1/ebook). 193-218 (2012).

Summary: A critical issue for all involved in primary and secondary mathematics education is how to ensure that all students learn mathematics successfully so that at the end of schooling they have the mathematical knowledge, skills, and confidence necessary to fully participate in further learning, employment, community life, and citizenship. This issue focuses attention on pedagogy which is the method or process of teaching, and generally refers to instructional strategies or actions. This chapter provides an overview of Australasian studies that have explored successful pedagogy within the context of mathematics education over the past four years (2008 to 2011). Our purpose is to highlight new insights that contribute to knowledge about what constitutes successful mathematics pedagogy for all students, to note any issues or tensions emerging from the findings, to identify any silences in the research agenda, and to recommend areas for future research. In selecting the studies to review in this chapter, we have been inclusive of research methods, and considered both small and large-scale studies. Our central selection criterion has focused on Australasian studies where the findings are valid, reliable, and make an important contribution to knowledge about successful pedagogy in mathematics education. Our review suggests that over the past four years, Australasian research about successful mathematics pedagogies has concentrated on three important themes, and these form the framework for our review. These themes are: (a) creating powerful learning environments; (b) selecting tasks and models that promote deep learning; and (c) knowing and using pedagogical knowledge. This chapter discusses the key findings within this framework, and then considers the overall contribution of these studies to knowledge and understanding about successful mathematics pedagogy.

Classification: D40 C70 D50 D20

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