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Using real-life context to mediate mathematics teaching and learning.

Adams, G. (ed.), Proceedings of the British Society for Research into Learning Mathematics (BSRLM). Vol. 35, No. 2. Proceedings of the day conference, Durham University, UK, June 6, 2015. London: British Society for Research into Learning Mathematics (BSRLM). 58-63 (2015).

Summary: This paper presents a joint early stage analysis of data from a doctoral pilot study and the Mathematics for Education & Industry (MEI) funded ‘core maths’ project, which explored the contextualization of real-life problems in the teaching and learning of mathematics in post-16 core maths classrooms. The study considers the ‘criticality’ or ‘criticalness’ of students’ intuitive mathematical reasoning on problem-solving real-life problems through dialogue generated between students, and teachers during lesson study sessions. Bakhtin’s philosophical orientation concerning dialogue and difference, captured in a methodological application called ‘dialogism’, offers significant insights to classroom discourse. To Bakhtin, dialogue, as an antidote to monologism, generates a difference and, as a consequence, has the potential to expand students’ capacity to cross individual borders. Case study data was collected from two sixth form schools and an FE college, with real-life context mediated pedagogy as the overarching research theme. Initial findings suggest that dialogism and dialogical pedagogical practices in this context have the potential to develop students’ critical mathematical thinking (CMT).

Classification: D44 D34 C34 D54

Keywords: critical mathematics education; upper secondary; further education; educational research; case studies; lesson study; classroom observation; real-life mathematics; critical mathematical thinking; context mediated mathematical learning; teaching; pedagogy; core mathematics; classroom discourse; dialogues; Bakhtin’s dialogism

<http://www.bsrlm.org.uk/IPs/ip35-2/BSRLM-IP-35-2-11.pdf>