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Mathematical knowledge for teaching problem solving: lessons from lesson study.

Oesterle, Susan (ed.) et al., Proceedings of the 38th conference of the International Group for the Psychology of Mathematics Education “Mathematics education at the edge”, PME 38 held jointly with the 36th conference of PME-NA, Vancouver, Canada, July 15–20, 2014, Vol. 3. [s. 1.]: International Group for the Psychology of Mathematics Education (ISBN 978-0-86491-360-9/set; 978-0-86491-363-0/v.3). 97-104 (2014).

Summary: Although the importance of mathematical problem solving is now widely recognised, relatively little attention has been given to the conceptualisation of mathematical processes such as representing, analysing, interpreting and communicating. The construct of mathematical knowledge for teaching is generally interpreted in terms of mathematical content, and in this paper we describe our initial attempts to broaden MKT to include mathematical process knowledge (MPK) and pedagogical process knowledge (PPK). We draw on data from a problem-solving-focused lesson-study project to highlight and exemplify aspects of the teachers’ PPK and the implications of this for our developing conceptualisation of the mathematical knowledge needed for teaching problem solving.

Classification: D50 D39

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