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Jablonka, Eva

Modes of reasoning in the mathematics classroom: a comparative investigation.

Pope, Sue (ed.), Proceedings of the British Society for Research into Learning Mathematics (BSRLM). Proceedings of the British congress of mathematics education, BCME-8, University of Nottingham, UK, April 14–17, 2014. London: British Society for Research into Learning Mathematics (BSRLM). 199-206 (2014).

Summary: This paper attempts to map a range of modes of mathematical reasoning employed in classrooms from Germany, Hong Kong and the United States taught by experienced teachers locally judged to be competent. Reasoning here is used as an umbrella term for modes of justification within a range of strategies that aim at making discursively available some elements of mathematical practice. The significance of this analysis consists in the attempt of describing modes of reasoning in a way that accommodates the diversity of mathematical topics, achievement levels, curriculum traditions and culturally sanctioned modes of interaction, rather than in the outcome of the comparison itself.

Classification: E50 E40

Keywords: student reasoning; justifying; educational research; comparative studies; discursive analysis; argumentation; documenting; naming; defining; explicating; proving; mathematical language
<http://www.bsrlm.org.uk/BCME8/BCME8-26.pdf>