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Primary teachers notice the impact of language on children's mathematical reasoning.

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Summary: Mathematical reasoning is now featured in the mathematics curriculum documents of many nations, but this necessitates changes to teaching practice and hence a need for professional learning. The development of children's mathematical reasoning requires appropriate encouragement and feedback from their teacher who can only do this if they recognise mathematical reasoning in children's actions and words. As part of a larger study, we explored whether observation of educators conducting mathematics lessons can develop teachers' sensitivity in noticing children's reasoning and consideration of how to support reasoning. In the Mathematical Reasoning Professional Learning Research Program, demonstration lessons were conducted in Australian and Canadian primary classrooms. Data sources included post-lesson group discussions. Observation of demonstration lessons and engagement in post-lesson discussions proved to be effective vehicles for developing a professional eye for noticing children's individual and whole-class reasoning. In particular, the teachers noticed that children struggled to employ mathematical language to communicate their reasoning and viewed limitations in language as a major barrier to increasing the use of mathematical reasoning in their classrooms. Given the focus of teachers' noticing of the limitations in some types of mathematical language, it seems that targeted support is required for teachers to facilitate classroom discourse for reasoning.

Classification: C50 E50

Keywords: language; noticing; reasoning; primary mathematics; mathematical terminology

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