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Moving beyond basic numeracy: data modeling in the early years of schooling.

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Summary: Recent research has shown that young children are capable of engaging in data modeling and making informed judgments, an aspect of the mathematics curriculum not previously considered integral to early numeracy. In an Australian study, a sample of 21 highly able Grade 1 students was engaged in a series of investigations where they developed their own ways of representing data they had collected themselves. Students made impressive progress in 1 year, partly as a result of students' repeated critical reflection and refinement of their graphical representations, which enhanced a wide range of meta-representational competencies. The five structures inherent in the Awareness of Mathematical Pattern and Structure model supported the interpretation of their development of statistical concepts. The study indicates that student-led data modeling with an emphasis on pattern and structure can contribute to critical numeracy and enhance the early development of statistical concepts.

Classification: K42
Keywords: numeracy; data modeling; data analysis; informed judgements; statistical concepts; representation of data
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