Hunter, Jodie

Developing learning environments which support early algebraic reasoning: a case from a New Zealand primary classroom.

Summary: Current reforms in mathematics education advocate the development of mathematical learning communities in which students have opportunities to engage in mathematical discourse and classroom practices which underlie algebraic reasoning. This article specifically addresses the pedagogical actions teachers take which structure student engagement in dialogical discourse and activity which facilitates early algebraic reasoning. Using videotaped recordings of classroom observations, the teacher and researcher collaboratively examined the classroom practices and modified the participatory practices to develop a learning environment which supported early algebraic reasoning. Facilitating change in the classroom environment was a lengthy process which required consistent and ongoing attention initially to the social norms and then to the socio-mathematical norms. Specific pedagogical actions such as the use of specifically designed tasks, materials and representations and a constant press for justification and generalisation were required to support students to link their numerical understandings to algebraic reasoning.

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