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Owens, Kay

Substantive communication of space mathematics in upper primary school.

Chick, H. L. (ed.) et al., Proceedings of the 29th annual conference of the International Group for the Psychology of Mathematics Education, PME 29, Melbourne, Australia, July 10–15, 2005. Vol 1-4. Melbourne: University of Melbourne, Dep. of Science and Mathematics Education. Part IV, 33-40 (2005).

Summary: A collaborative action research project with preservice teachers built on Wood's paper "Complexity in teaching and children's mathematical thinking" (In N. Pateman, B. J. Doherty, and J. Zilliox (Eds.) Proc. 27th Conf. of the Int. Group for the Psychology in Mathematics Education (Vol. 4, pp. 435-442). Hawaii: PME) and the NSW Department of Education and Training documents called substantive communication. There is little research on argumentation about space mathematics in primary schools so this is the focus of the reported study. A qualitative analysis of the data shows that these teachers took account of students' current knowledge and tried to extend it, acted upon their reflections of their teaching, and provided effective challenges and questions. Within space mathematics, we see incidences of strategy reporting and argumentation reminiscent of Wood's paper.

Classification: G23 C53 C33 B53 A63

Keywords: action reasearch project; preservice teachers; lower secondary; elementary geometry; propaedeutics; space geomertry; educational strategies; classroom communication; questioning techniques; teacher analysis of student knowledge; student evaluation; persuasive discourse
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