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Explaining student achievement: the influence of teachers' pedagogical content knowledge in statistics.

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Summary: Statistics is an increasingly important component of the mathematics curriculum. *StatSmart* was a project intended to influence middle-years students' learning outcomes in statistics through the provision of appropriate professional learning opportunities and technology to teachers. Participating students in grade 5/6 to grade 9 undertook three tests, a pre-test, a post-test and a longitudinal retention test over a period of 2 years. Their teachers completed a survey that included items measuring pedagogical content knowledge (PCK) for teaching statistics. Despite the development of valid instruments to measure both student and teacher content knowledge and teachers' PCK, linking teachers' knowledge directly to students' learning outcomes has proved elusive. Multilevel modelling of results from 789 students for whom there were 3 completed tests and measures from their teachers indicated that students' outcomes were influenced positively by their initial teacher's PCK. Extended participation of teachers in the project also appeared to reduce negative effects of changing teachers.

Classification: C30 D39 K40
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