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**Promoting middle school students' proportional reasoning skills through an ongoing professional development programme for teachers.**

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Summary: Proportional reasoning, the ability to use ratios in situations involving comparison of quantities, is essential for mathematical competence, especially in the middle school years, and is an important determinant of success beyond school. Research shows students find proportional reasoning and its foundational concepts difficult. Proportional reasoning does not always develop naturally, however some research suggests that with targeted teaching, its development can be promoted. This paper reports on a large Australian study involving over 130 teachers and their students. A major goal of the study was to investigate the efficacy of ongoing teacher professional development for promoting middle years students' proportional reasoning. A series of professional development workshops was designed to enhance the teachers' understanding of proportional reasoning and to extend their repertoire of teaching strategies to promote their students' proportional reasoning skills. The workshop design was informed by research literature on proportional reasoning teaching and learning as well as the results of a diagnostic instrument administered to over 2500 middle years students prior to the professional development. Between workshops, the teachers implemented a variety of targeted teaching activities. This paper reports on pre- and post- instrument student data collected at the beginning and end of the first year of the project (i.e., after completion of half of the workshops). The findings suggest that targeted professional development and explicit teaching can make a difference to students' proportional reasoning.

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