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Fung, Dennis; Kutnick, Peter; Mok, Ida; Leung, Frederick; Pok-Yee Lee, Betty; Mai, Yee Yan; Tyler, Matthew Telford

Relationships between teachers' background, their subject knowledge and pedagogic efficacy, and pupil achievement in primary school mathematics in Hong Kong: an indicative study.

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Summary: This study investigates how teacher background, subject knowledge and pedagogic efficacy affect Grade 4 children's (aged 9–10) mathematical achievement in 10 primary schools in Hong Kong. Mathematics teachers were selected for their strong commitment to teaching mathematics and their pupils' consistently high international mathematics performance. Teacher measures (i.e. level of mathematics education, teaching experience, mathematics subject knowledge, performance in mathematical operations and pedagogic efficacy) were checked for factor consistency and assessed against age-appropriate pupil mathematical achievement. The results showed that teachers were secure in their subject knowledge, and that such knowledge was related to their performance of mathematical operations, but it was high levels of pedagogic efficacy and the ability to perform age-appropriate mathematics operations (rather than subject knowledge) that positively affected their pupils' achievement. These findings contradict ongoing international calls for the enhancement of primary school teachers' mathematical subject knowledge, as they show pedagogic efficacy to be more strongly associated with pupil achievement.

Classification: C30 C49

Keywords: Hong Kong; mathematics subject matter knowledge; pedagogic efficacy; performance of mathematical operations; teacher background

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