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Prospective elementary teachers' knowledge of fraction division.

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Summary: Prospective elementary teachers must understand fraction division deeply in order to meaningfully teach this topic to their future students. This paper explores the nature of the subject content knowledge of fraction division possessed by a group of Taiwanese prospective elementary teachers at the beginning of their mathematics methods course. The findings provide preliminary evidence that many prospective Taiwanese elementary teachers have developed the knowledge package of fraction division as described by *L. Ma* [Knowing and teaching elementary mathematics: teachers' understanding of fundamental mathematics in China and the United States. Mahwah: Lawrence Erlbaum Associates (1999; ME 2000f.03889)]. The nature of various strategies used by these teachers provides further illustration of a secure common content knowledge that can serve as a benchmark for the development of mathematics courses for prospective teachers. However, the findings also show that the tasks of representing fraction division, through either word problems or pictorial diagrams, are challenging even for those highly proficient in elementary and middle school mathematics. The broader implications of this research for the international community are discussed, and recommendations for elementary teacher education programs are presented.

Classification: D50 F49 C49

Keywords: prospective elementary teacher; teacher education; fraction division; mathematical knowledge for teaching

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