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The open approach in lesson study – enhancing teachers’ knowledge of teaching division of fractions.

Rogerson, Alan (ed.), The mathematics education for the future project. Proceedings of the 13th international conference ‘Mathematics education in a connected world’, Catania, Sicily, Italy, September 16–21, 2015. Münster: WTM-Verlag (ISBN 978-3-942197-44-1/pbk; 978-3-942197-86-1/ebook). Conference Proceedings in Mathematics Education 1, 247-253 (2015).

Summary: Fraction is a difficult topic for teachers to teach and for students to learn. This is partly because we do not allow students to explore the concept in their context. The open approach help students to explore mathematics through their own experience, to communicate those ideas to others which allows them to reflect and critically assess their thoughts as well as others creating a deeper understanding of concept. This paper reports on a lesson study conducted with six Jamaican teachers. The teachers developed a lesson to teach division of fractions through the use of open approach method to a grade six class. Their main aim was to develop a better way to help students understand division of fractions. The study highlights the pedagogical knowledge, content knowledge, and the interactions between teacher and students during discussion of the lesson. Most students displayed a deeper understanding of diving fractions and teachers expressed their increase in confidence to use the open approach method to teach mathematics.

Classification: D39 D49 F43

Keywords: lesson study; division of fractions; pedagogical knowledge; content knowledge; interactions; discussion