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Connections and simultaneity: analysing South African G3 part-part-whole teaching.

Nicol, Cynthia (ed.) et al., Proceedings of the 38th conference of the International Group for the Psychology of Mathematics Education “Mathematics education at the edge”, PME 38 held jointly with the 36th conference of PME-NA, Vancouver, Canada, July 15–20, 2014, Vol. 5. [s. 1.]: International Group for the Psychology of Mathematics Education (ISBN 978-0-86491-360-9/set; 978-0-86491-365-4/v.5). 337-344 (2014).

Summary: Analysis of Grade 3 mathematics teaching in South Africa shows evidence of associations between teaching and learning outcomes in an adapted learning study. The intervention dealt with partitioning and part-part-whole relations, taking a structural approach within tasks and representations. Our analysis of this teaching emphasizes simultaneity of examples, and connections within and across examples and representations. This analysis indicated differences in enactment of a jointly planned lesson that related to different patterns of learning outcomes between the three classes. Episodes of teaching containing work with representations marked by connections and simultaneity closed gaps in learning outcomes seen in the pre-test.

Classification: F32 C72

Keywords: partitioning; part-part-whole relations; teaching-learning process; learning outcome