

https://dspace.org/

Understanding pedagogic shifts from concrete to abstract conceptions of number.

Alexander, Michele

2015-05-19
http://hdl.handle.net/10539/17798

Downloaded from a DSpace repository. https://dspace.org/

Understanding pedagogic shifts from concrete to abstract conceptions of number

Abstract

My research study aimed to explore the pedagogic shifts between working with concrete to more abstract conceptions of number. By using a case study approach focused on a grade 2 (G2) Foundation Phase (FP) teacher who retained her class into grade 3 (G3), I gathered data on her teaching over two years (2012-13) in the context of the 'Lesson Starters Project' (LSP). In addition, the teacher also participated in another project within the Wits Maths Connect Primary project (WMC-P) which was focused on developing content knowledge related to primary mathematics during 2013. Whilst content knowledge course assessment indicated gains through this year, the teacher's results indicated gaps in mathematical content knowledge - a feature that literature has highlighted as quite common amongst primary teachers in South Africa and internationally. My focus in this study is on the extent to which this teacher in the LSP professional development project specialised content and modes of representation and showed connections between these aspects.

The findings showed that there were varying degrees of specialisation of content and specialisation of representations. In other words, the teacher is seen to make the mathematics more sophisticated in conjunction with the use of a variety of representations or strategies. There was evidence that the degree of shifts towards more abstract strategies depended at least partially on the teacher's beliefs about the abilities of different learners in her class.