

ZMATH 2015c.00556

Hopkins, Sarah; De Villiers, Céleste

Capturing diversity in the classroom: uncovering patterns of difficulty with simple addition.

Bishop, Alan (ed.) et al., Diversity in mathematics education. Towards inclusive practices. Cham: Springer (ISBN 978-3-319-05977-8/hbk; 978-3-319-05978-5/ebook). Mathematics Education Library, 219-237 (2015).

Summary: In this chapter, we draw attention to a common problem encountered in mathematics classrooms, poor number fluency with simple addition. We believe poor number fluency restricts children's ability to learn mathematics and that a different type of research is needed to inform teachers' practice to improve number fluency. We used a variety of techniques to capture differences in how children performed simple addition at a time when curriculum documents suggest that proficiency is expected. The findings illustrate marked diversity in performance and reveal varied patterns of difficulty, including the use of highly inefficient counting strategies, inconsistent counting errors and low retrieval on key problem types. The research approach described here provides clear pointers for where teachers need to target instruction for individual children. We propose that inclusive teaching practices are those that are matched to children's individual patterns of difficulty and suggest how this may be achieved.

Classification: F32 C32 D72 D42 C72

Keywords: addition; counting; difficulties; fluency; proficiency; retrieval

doi:10.1007/978-3-319-05978-5_13