

A case study of mental mathematics lessons: Analysing early grade teachers' perceptions of their practice

Research has shown that South African primary school students are performing below international and national grade-level expectations for mathematics. Personal experience and literature reveal that the reliance on counting-based strategies, the development of more efficient, number-range appropriate strategies impedes. Teaching for understanding and reasoning supports the development of reasoning-based calculating strategies, negating the need for the memorisation of facts, rules and procedures. Mathematical proficiency describes success in mathematics as the ability not only to calculate accurately but also to understand, apply, reason and engage with mathematics. This proficiency consists of an interrelated set of equally important actions that combine calculating, understanding, applying, reasoning, and engaging.

This case study aims to analyse how early grade teachers perceive their mental mathematics teaching practices and considers the interrelated dimensions that contribute to the activity of teaching. Two Grade 3 teachers participated in the study. Data collection comprised introductory interviews (semi-structured), lesson observation video recordings, self-reflection checklists and reflective interviews (unstructured). During a workshop session, the teachers discussed mathematical proficiency and the resultant implications for teaching mental mathematics, whereafter they reflected on their practice lessons – both pre-and post-workshop – via video recording, using the lens of mathematical proficiency.

Using Activity Theory, the analysis revealed that both teachers are aware of where and how they should adapt their practices.

The findings of this study highlighted tensions between existing practices and desired practices and may lead to professional learning opportunities that enable transformative teacher practice.

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