

PRIMARY MATHEMATICS IN-SERVICE TEACHING DEVELOPMENT: ELABORATING 'IN-THE-MOMENT'

ABSTRACT

This study investigates how primary school mathematics in-service teachers respond to learners' offers, over time, during classroom interactions. The study was a follow-up to a one-year long in-service 'maths for teaching' professional development course in which 33 teachers participated in 2012. Four teachers from that course were tracked in this follow-up study. Data sources within this study consisted of two cycles of observations of lessons taught by the four teachers in 2013 and 2014, and an interim video-stimulated recall (VSR) interview with each teacher, with reflections guided by the structure of Rowland et al.'s 'knowledge quartet'. A total of 18 lessons from the four teachers were video-recorded across the 2013 and 2014 observations. The notion of 'elaboration' was used in this study as an interpretive lens to examine and characterise responsive teaching actions in the South African context, with the focus narrowing over the course of the PhD to contingency situations within the knowledge quartet framework, focused on responses to learner offers. In the South African literature, the terrain of elaboration is characterised by extensive gaps in teachers' mathematical knowledge, incoherent talk, and frequent lack of evaluation of learners' offers in the classroom.

Using a grounded theory approach, I propose an 'elaboration' framework with three situations of responsive teaching (breakdown, sophistication and individuation/ collectivisation), which can be used as a tool to support the development of more responsive teaching in the South African context (and perhaps in other contexts where similar problems prevail). In this way, the study has contributed in terms of identifying some important 'stages of implementation' (Schweisfurth, 2011) that might be required to move towards the ideals of more responsive teaching that are described in the international literature, and yet remain distant from the realities of South African schooling.

Using the three markers of shifts (*extent*, *breadth* and *quality*) in elaboration recruited in this study, drawn from the ways in which the dimensions of responsive teaching were conceptualised, I report on the different patterns of shifts in elaboration by the four teachers. The results of this analysis indicated that all four teachers made shifts in their responses to learners' offers from 2013 to 2014 lessons in at least one or more dimensions of responsive teaching, in relation to *extent*, *breadth* and *quality* of elaborations. Findings from VSR interviews indicated associations between shifts in teachers' reflective awareness, and shifts in responsive teaching actions. Theoretically, the study contributes through characterising responsive teaching actions in contexts of evidence of limited evaluation within the elaboration framework, with a language of description for identifying and developing more responsive teaching actions in a resource constrained context.

Keywords: Responsive teaching, contingent moments, classroom interactions, primary mathematics, in-service mathematics teachers, stages of implementation, elaboration, breakdown, sophistication, individuation, collectivisation.