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Grade 8 mathematics teachers' professional noticing of learners' thinking of common fractions

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ABSTRACT

This study explores how grade 8 mathematics teachers attends, interprets, and decide how to respond to their learners' mathematical thinking. The study also seeks to understand the extents to which mathematics teachers build on the understanding of particular learners on the basis of insights they (the teachers) have gained from the understanding reflected in those learners' strategies. Potentials for mathematics teachers' development in professional noticing was also explored through development activity involving video stimulated recall (VSR) interviews. Professional noticing is conceptualised in terms of providing a window into learners' mathematical thinking and also in terms of learning opportunities for both teachers and learners. I employed Jacob's et al (2010) framework of professional noticing to analyse the nature and extent of teachers' noticing during their lessons, and I conducted VSR interviews with the teachers thereafter to understand teacher's decision-making process as well as to open up for improvement through reflection-oriented questions.

Two grade 8 mathematics teachers in one non-fees paying secondary school in Johannesburg participated. Data was collected through lesson observation and in-depth semi-structured interview with each case study teacher. Findings from this study indicates that the noticing patterns of the case study teachers in this study were predominantly characterised by low-level consideration of learners' solution action. It also emerged that there is a potential for VSR as a tool for supporting the development of mathematics teachers' professional noticing of their learners' mathematical thinking. The implications of these findings for policy and practice on mathematics teaching in South Africa suggests that teacher education and teacher development programs in South Africa need to do more to equip both pre-service and in-service mathematics teachers with better ways of noticing student understanding. Such support as highlighted by Mason (2011) is necessary for in-service mathematics teachers in South Africa to better notice and build on learners' verbal- and written strategy explanations, particularly.

Keywords

Mathematical thinking, noticing, attending, interpreting, deciding how to respond.