



Primary Teachers' Mathematical Self-concept and its Relationship with Classroom Practice

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Mathematical self-concept refers to the perceived ability that one has in being able to do mathematics. Previous research suggests that a teacher's belief in their mathematics ability plays a vital role in the way in which they teach mathematics (Stipek et al., 2000). Teachers who identify as being 'good' and 'able' in the subject often tend to take greater risks in challenging their students mathematically. Conversely, teachers who consider themselves not to be 'good' at mathematics often tend to be much more cautious or reserved in how they teach and engage in the subject with their students (Stipek et al., 2000).

While it has been shown to be a significant predictor for how students learn and apply mathematics, little research has been conducted into the relationship between the mathematical self-concept of teachers and their pedagogical practices in the mathematics classroom. This paper reports on a section of the findings from a small mixed methods study that sought to ascertain the nature of primary teachers' mathematical self-concept and how it is related to their teaching practices. The study was organised into two phases. In phase one, three case study participants were identified after completing an online survey/questionnaire that identified their current level of mathematical self-concept, using Marsh and O'Neill's (1984) Self-Description Questionnaire III (SDQIII). In phase two, individual teacher interviews and two classroom observations per case study participant were conducted. The researchers' field notes and transcribed interviews were interrogated and analysed using the Framework for Engagement with Mathematics (Attard, 2014), identifying the elements of each aspect of the Framework evident in the teachers' lessons.

This study revealed that a teachers' mathematical self-concept does not always reflect their pedagogical practices. Individual school contexts, the proactive engagement in the attainment of professional learning as well as a teacher' personal engagement with the profession, all appear to be factors that influence this finding.

References

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