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Learners' identity in mathematics

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ABSTRACT

The study reported in this dissertation sought to explore Grade 8 learners' identities in mathematics. The study focused on examining learners' interpretations of their relationships with the discipline of mathematics. The study drew on ideas from three different yet complementing theoretical perspectives as advocated by Gee (2001), Wenger (1998), and Sfard and Prusak (2005). However, Wenger's (1998) broader social theory of learning was selected as a theoretical framework of this study to particularly connect the process of active engagement and participation in the practices of social communities and explain the construction of learners' identity in mathematics.

The study refuted a view that mathematics learners are born with special genes which drive them to succeed in doing the subject. This stance permitted the study to divert from discussing the role of models of abilities when doing mathematics or what Darragh (2016) described as a 'performative identity'. Rather, the study was inclined to look at relationships between emotional and cognitive reactions that shift from time to time whenever mathematics is made accessible for learners through participatory pedagogy which encourages exploration, negotiation and ownership of knowledge.

The study employed mixed methods research. The reasons for employing mixed methods research included the researcher's beliefs and that the research questions were both exploratory and confirmatory type of questions. The research used a sequential mixed methods design. In the first phase, data sets were collected and analysed from an open-ended questionnaire (qualitative component). The results from the first phase were then used to develop a Likert-scale questionnaire (quantitative component) which informed the third phase (qualitative component). The third phase of the research design was semi-structured interviews. The interviews expanded the analyses of data from both initial qualitative and quantitative components.

The reported findings indicated that the learners strongly needed teachers to clearly explain mathematics concepts. The learners required to understand mathematics in order to identify with the subject. The learners explained that if they understand mathematics, they become interested in learning the subject. Mathematics becomes their favourite subject. And if they do not understand, the learners expressed that they withdraw their participation in the classroom. In cases where learners shared incoherent views about how they are at learning mathematics, it was concluded from the analyses of the results that they needed to carefully listen to the teacher, ask for more examples to familiarise themselves with procedures, and then do their level best during assessments to pass the subject in order to align themselves with certain careers in the future.