

Exploring the ‘High’ and ‘Low’ Points in Primary Preservice Teachers’ Mathematics-related Identity Development

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Research indicates that many primary teachers have not experienced healthy relationships with mathematics as students (Maasepp & Bobis, 2014), making it difficult to nurture positive identities in their own students. Such a situation can be detrimental to primary students’ long-term decisions to undertake further study in mathematics. Studying identity is problematic due to its complexity—commonly conceptualized as dynamic, multidimensional and formed through a blend of personal characteristics and long-term socio-cultural experiences. Such complexity has raised questions about the capacity of researchers to provide an adequate measure of mathematical identity (Kaspersen et al., 2017). With this challenge in mind, we sought to explore the mathematical experiences of primary preservice teachers (PSTs) that helped shape their current mathematics-related identities.

We used a qualitative data-gathering task requiring preservice primary teachers to ‘graph’ their emerging relationships with mathematics. A cultural-historical activity approach was used to analyse data from nine final year preservice primary teachers’ graphs and accompanying semi-structure interviews to reveal what and how key events in their lives helped shape their current mathematical identities.

Thematic analysis of data revealed that cultural expectations, parental and teacher influences were among the key factors that shaped PSTs’ mathematics-related identities. Oscillations between ‘high’ and ‘low’ points in their relationships with mathematics was a feature of participants’ graphs regardless of their current mathematical identities. These graphic representations affirm conceptualisations of identity as a dynamic construct that is constantly shifting. Moreover, just one event has the potential to instigate a turning point as a downward or upward trajectory in mathematics-related identity formation. Of interest was the nature of these turning point events that could influence trajectory changes and why some PSTs could experience similar events to others but develop very different mathematical identities. Combined with semi-structured interviews, the graphing task is posited as a valuable method for researchers and practitioners to explore mathematics-related identity. Such information can assist mentoring processes to help PSTs reflect upon identity formation and the experiences that can positively shape the mathematics-related identities of their future primary students.

References

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