Mathematical Affective Factors Experienced by Year 7 Students During Transition to Secondary School

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The transition for students from primary to secondary school is one of great change. This can have a large impact on students' progress in mathematics. This may not only be reflected in academic achievement but also a decline in interest in and motivation to learn mathematics (Kaur et al., 2022). This can then lead to the development of negative attitudes towards mathematics (e.g., Rončević Zubković et al., 2023) and a potential increase in mathematics anxiety (e.g., Deieso & Fraser, 2019). However, a longitudinal study by Klee and Miller (2019) showed that there were a variety of different mathematics anxiety trajectories that students experience across the transition period.

The current study looked at what students identify as factors that influence feelings about mathematics during transition from primary to secondary school including attitudes towards mathematics and mathematics anxiety. Year 7 students (n = 286) were measured for these aspects of mathematical affect at the end of Term 1 and the end of Term 3 and were also asked to write a metaphor about what mathematics was like for them at both time points.

It was found that students' attitudes towards mathematics significantly deteriorated. The metaphor analysis was able to illustrate a richer understanding of students' attitudes (e.g., "math is like a big, scary bear"; "math is like tasty food"; "maths is like 1967 television") and how they changed over time. This presentation will explore the complex relations between students' metaphors and their overall feelings about mathematics.

A purposive sample of students (n = 16) were also interviewed to clarify their attitudes and what factors influenced these. These participants were selected to represent three groups based on changes in attitudes towards mathematics: those whose attitudes improved, those whose attitudes remained unchanged, and those whose attitudes deteriorated. It was found that for those students whose attitudes towards mathematics deteriorated, this was related to negative experiences of secondary school mathematics. The factors driving this were harder content, content moving at a faster pace and the high use of textbooks in secondary school. When this group is compared to the improved attitude group, they reported a lower rate of lack of self-confidence, and higher stress and anxiety.

References

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