Factors influencing student decision on senior secondary school subjects

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There are substantial and ongoing concerns in the Australian and international secondary and tertiary education sectors about students’ transition from secondary to tertiary mathematics. Declining enrolments in university mathematics and increasing failure rates in first year are often attributed to falling participation in advanced mathematics in secondary school and less stringent university entry requirements, which have adversely affected students' mathematical preparedness for university study.

In this presentation I will present data collected on three topics: reasons for choosing/not choosing advanced mathematics in secondary school, attitudes towards learning mathematics at school, and attitudes towards learning mathematics at university. This data was collected from four separate groups of people: secondary school mathematics students, secondary school mathematics teachers, university mathematics academics, and university mathematics education academics. The results suggest that there are distinct differences in students’ thoughts depending on which mathematics they study in the last two years of secondary school. There are also differences between what students say are the reasons for their subject choice and what mathematics academics think are the reasons. The data also sheds light on subject choice myths. This presentation is part of a two-year state-wide longitudinal project that is investigating the transition from secondary to tertiary mathematics.