

ASSESSING FIRST YEAR BIOLOGY STUDENTS' MATHS ATTITUDES: DOES HSC MATHS FOSTER CONFIDENCE?

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BACKGROUND

From 2019, science students at the University of Sydney will be required to have high school mathematics. Our research has highlighted biology students lack confidence in mathematics (e.g. Quinnell & Wong, 2007; Quinnell, Thompson & LeBard, 2013; LeBard, Thompson & Quinnell, 2014) and this lack of confidence can be associated with anxiety. We are interested in whether the new HSC maths requirement will impact biology students' attitudes to, and conceptions of, mathematics, particularly mathematics confidence. Here we offer an early assessment using current data.

APPROACHES

We surveyed first year biology students in 2015 and 2018 using the Attitudes to Mathematics survey instrument (modified from Fennema and Sherman, Doepken et al; *confidence* $n=12$, *usefulness* $n=12$), would recommend maths to others (Wismath & Worrall, 2015; $n=2$), conceptions of Biology (Quinnell, May, Peat & Taylor, 2005; *fragmented* $n=10$ and *cohesive* $n=10$), and conceptions of mathematics (Crawford, Gordon, Nicholas & Prosser, 1998; *fragmented* $n=10$ and *cohesive* $n=10$). Statistical analysis investigated ATAR (or equivalent), performance in first year biology, and median scores for attitudes to mathematics.

FINDINGS

The mathematics confidence of first year biology students with or without HSC maths, were not significantly different; noting 6.7% of the 2015 cohort and 2.8% of the 2018 cohort did not have HSC maths.

FUTURE

We argue that requiring mathematics is unlikely to lead to improved students' attitudes to mathematics as building numeric confidence strategies that sit beyond simply 'learning maths'.

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