

<b>Project title</b>	Quantitative literacies outside school mathematics
<b>Principal supervisor</b>	Prof Cathy Smith
<b>Second supervisor</b>	Dr Vinay Kathotia
<b>Discipline</b>	Mathematics education
<b>Research area /keywords</b>	Mathematics education, cross-curricular mathematics, numeracy, real world mathematics, gender
<b>Suitable for</b>	Full time applicants, Part time applicants

### Project background and description

Mathematics can provoke starkly contrasting attitudes among school students, which are influenced by perceived attainment, career utility and gender (Noyes & Adkins, 2016). There are arguments that increasing the relevance of mathematics to students' lived experience or other areas of study will develop students' mathematical skills and encourage them to study and use mathematics (Smith & Golding, 2018), thus reducing the numeracy gap (Borgonovi et al., 2021). Education policy may be moving towards more integration of mathematics in other subjects. For example, following a review of science, psychology, economic and geography A-levels (Nuffield Foundation, 2012), the post-2017 specifications include mathematical content, while future curriculum projects propose a focus on quantitative literacies and domain-specific mathematical competences (Royal Society, 2023).

In this project, we will use survey and interview techniques to research the experiences and attitudes of students using mathematics within other subjects, for example in the new mathematically-rich A levels and/ or Core Mathematics.

Students will be expected to review relevant literature, construct research instruments, contact schools and develop and apply qualitative analytic methods to the data.

### Background reading/references

- Borgonovi, F., Choi, A., & Paccagnella, M. (2021). The evolution of gender gaps in numeracy and literacy between childhood and young adulthood. *Economics of Education Review*, 82.
- Noyes, A., & Adkins, M. (2016). Studying advanced mathematics in England: Findings from a survey of student choices and attitudes. *Research in Mathematics Education*, 18(3), 231–248.
- Nuffield Foundation. (2012). *Mathematics in A level assessments*. Nuffield Foundation.
- Royal Society. (2023). *A new approach to mathematics and data education*.
- Smith, C., & Golding, J. (2018). Schools' Strategies for Promoting Girls' Participation in Mathematics. In E. Bergqvist, M. Österholm, C. Granberg, & L. Sumpter (Eds.), *Proceedings Of the 42nd Conference of the International Group for the Psychology of Mathematics Education (Vol 4) Umeå, Sweden*. (pp. 211–218).