

Investigating students' attitudes towards mathematics in socioeconomically disadvantaged schools

Aoibhinn Ní Shúilleabháin, CASTeL, Dublin City University
Thomas Delahunty & Diarmuid Hyland, Maynooth University
Emma Owens, Nottingham University, UK
Roisin Neururer, University College Dublin
& Mark Prendergast, University College Cork
Aoibhinn.nishuilleabhain@dcu.ie

Abstract

In Ireland socioeconomic disadvantage significantly impacts mathematics achievement, a disparity exacerbated by the "bonus points" policy for Higher Level Leaving Certificate mathematics (McCoy et al., 2019). While evidence from TIMMS suggests that students attending schools designated as socioeconomically disadvantaged are less likely to enjoy mathematics and have a more negative attitude towards the subject (e.g. Denner et al., 2025), little is understood about their attitudes towards mathematics more broadly. This research investigates the attitudes of post-primary learners in DEIS (Delivering Equality of Opportunity in Schools) contexts, addressing a gap in understanding how disadvantage shapes learner dispositions towards the subject and, therefore, their achievement. Using an adapted Attitude Towards Mathematics Inventory (ATMI) (Lim & Chapman, 2013) with 552 learners across 10 DEIS schools, the study analysed their attitudes regarding Enjoyment, Self-Confidence and Value of Mathematics.

Findings indicate that male students demonstrate significantly higher self-confidence in mathematics than their female counterparts. Notably, having English as a first language did not influence self-confidence levels, suggesting dispositions towards and experiences of the subject were unrelated to language. The data also suggests that female students in urban schools reported a higher appreciation for the value of mathematics compared to other subgroups. Contextualizing these findings within broader trends, our data confirms a more negative attitude towards mathematics for learners in DEIS schools compared to their non-DEIS peers and suggests that structural

barriers—such as limited access to Higher Level streams—combined with gendered self-concepts and a lack of understanding of the value of the subject beyond school, hinder STEM participation for disadvantaged youth, necessitating targeted interventions to address these entrenched inequities.

Keywords: Mathematics education; attitudes towards mathematics; socioeconomic disadvantage.

REFERENCES

- Denner, S., Clerkin, A., Pitsia, V., & McHugh, G. (2025). Trends in students' school experiences and attitudes towards mathematics and science: TIMSS 2015-2023. Educational Research Centre. <https://doi.org/10.70092/2091315.0625>
- Lim, S & Chapman, E. (2013). Development of a short form of the attitudes toward mathematics inventory. Educational Studies in Mathematics. 82. [10.1007/s10649-012-9414-x](https://doi.org/10.1007/s10649-012-9414-x)
- McCoy, S., Byrne, D., O'Sullivan, J., and Smyth, E. (2019). The early impact of the revised Leaving Certificate grading scheme on student perceptions and behaviour, ESRI Research Series 85, Dublin: ESRI. <https://doi.org/10.26504/rs85>