

Inequality in participation in shadow education in mathematics in Europe: An intersectional perspective¹

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INTRODUCTION

There is now a growing consensus on the multi-dimensional nature of educational inequality. Hence, an increasing number of studies adopt an “intersectional lens”, investigating how interactions between different dimensions of inequality influence student outcomes and experiences. Some of the more widely studied dimensions include socio-economic background, gender and migrant origin. When these dimensions intersect, it can intensify the inequalities experienced by students. In order to examine how the three axes of inequality, socio-economic status (SES), gender and migration background, operate together, this study focusses on take-up of out-of-school supplementary tuition in mathematics across Europe. Internationally, this is called “shadow education” (SE), while in Ireland the term “grinds” is commonly used.

DATA AND METHODS

The research draws on two data sources. For primary school students (around 10 years of age), the study utilises data from the 2019 wave of the Trends in International Mathematics and Science Study (TIMSS). For secondary school students (at age 15), the analysis uses the 2012 wave of the OECD Programme for International Student Assessment (PISA). The study focusses on EEA countries, including Ireland. The analyses examine the interaction between socio-economic status (measured using parental education), gender and migrant origin in shaping take-up of SE.

¹ This Bulletin summarises the findings from: Karaçay, İ., Bousselin, A., Benz, R., Darmody, M., Smyth, E. (2024). Inequality in participation in shadow education in mathematics in Europe: An intersectional perspective. *European Educational Research Journal*.

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RESULTS

The take-up of SE in mathematics across Europe varies between primary and secondary level, by country as well as across intersectional groups. The take-up at primary school level is low (13%) and notably higher at secondary school level (38%). Take-up is higher in Central and Eastern European and Southern European countries and lower in Northern European countries. However, the available information does not enable us to readily explain this pattern.

Disparities in SE participation are more pronounced at primary level. Participation is significantly higher among low-SES migrant female students and lowest among high-SES native males. Overall, take-up is greater among those whose parents have lower levels of education, suggesting it is being used by students who have greater difficulties with their schoolwork.

At secondary level, the pattern is different. Participation in SE is higher among higher-SES families, suggesting an investment by advantaged parents to secure academic success for their children. However, this social gap interacts with gender and migrant origin, with the take-up of SE in mathematics higher among high-SES migrant females and lowest among low-SES native males.

CONCLUSIONS

This study has highlighted the importance of utilising an intersectional approach to explore participation in SE. The results show that disparities in participation exist between countries, between levels of education and between different groups of students. Lower participation at primary school level could be explained by the fact that in most cases there are no state exams, so parents may be less likely to invest in additional tutoring. High stakes exams are more prevalent at secondary level, thus explaining the greater likelihood of availing of tutoring at this level. Socio-economic background, gender and migration background operate differently at each level of education, with the patterns suggesting a more compensatory role at primary level. At secondary level, participation seems to be driven by parents wishing to enhance the competitive edge of their children. Over and above the effect of social background, migrant-origin females appear to be more likely to use shadow education, with potential consequences for the gender gap among migrant-origin young people in later educational and employment outcomes.