

GENDER STEREOTYPING IN MOTHERS' AND TEACHERS' PERCEPTIONS OF BOYS' AND GIRLS' MATHEMATICS PERFORMANCE IN IRELAND

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Gender stereotyping in mothers' and teachers' perceptions of boys' and girls' mathematics performance in Ireland¹

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INTRODUCTION

Earlier research from other countries suggests that teachers and parents tend to associate 'natural' mathematical ability with boys more often than girls and stereotype mathematics as a male domain. There has been less attention on why teachers and parents form these judgements and whether they partly reflect children's own engagement with mathematics. This paper examines whether mothers and teachers estimate girls' mathematics performance less highly than that of boys', when taking account of their performance on mathematics tests. Being exposed on a daily basis to their pupils' mathematics performance, we might expect that teachers might be less influenced by gender stereotypes than mothers who are only likely to be exposed to their own child's mathematics performance. Mothers and teachers may also use other indicators (such as liking for mathematics, diligence in performing homework) in making assessments, and thus we also take account of these.

DATA AND METHODS

Using data on 8,500 9-year-old children from the Growing Up in Ireland study, we examine how mothers and teachers rate boys' and girls' mathematics performance. The children were surveyed in 2007/2008, and detailed information was gathered from them, their parents and teachers. Each child's teacher was asked 'How would you rate the study child's performance in mathematics relative to children in his/her age group?', to which they could respond 'below average', 'average' and 'above average'. Mothers were also asked: 'How well is the child doing in mathematics relative to other children of their age?', to which they could respond 'poor', 'below average', 'average', 'above average' and 'excellent'. We

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built statistical models to assess the relationship between ratings of mathematics performance and actual performance in mathematics at nine years, using standardised mathematics tests developed for school children and widely used in the Irish context. We also included controls for children's attitudes towards learning, drawing on measures of their liking of mathematics, their self-concept and school engagement, measured in terms of attendance and homework completion. Given how well each child was performing in mathematics at age 9 and taking into account many of their characteristics, we can see if boys or girls are more likely to be rated as being excellent by their mothers or above average by their teachers as compared to lower ratings.

RESULTS

Overall, boys demonstrate higher levels of actual mathematics performance and more positive attitudes towards mathematics compared to girls. However, the evidence also shows that girls' mathematics performance is underestimated by both teachers and, particularly, mothers, relative to boys'. Both rate boys more highly than girls, at all levels of achievement, and disparities are particularly pronounced among high achieving girls. The judgments partly reflect children's actual performance and engagement in the subject, but a notable gender gap remains. It is suggested that the results reflect gender stereotypes: overestimating boys' and underestimating girls' mathematics performance.

POLICY IMPLICATIONS

As early as nine years old, high achieving girls' performance at mathematics is being underestimated. It is highly likely that this will impact on girls' subsequent mathematics performance and on their career choice, since mathematics is seen as a key element in pursuing highly valued careers in Science, Technology, Engineering and Mathematics. Thus, calls for girls to consider such careers are likely to be ineffective if teachers and parents don't fully recognise the mathematics ability of young girls. The evidence from this and other research may help in raising awareness about the often unconscious and 'taken for granted' way in which stereotyping operates. In particular, the results highlight a role for teacher education, challenging the view that mathematics achievements reflect 'natural' ability. The research also points to the importance of encouraging parents to take seriously their daughters' actual mathematics performance on nationally validated tests. Finally, the evidence highlights the importance of supports to ensure all children and young people can positively engage with mathematics learning.

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