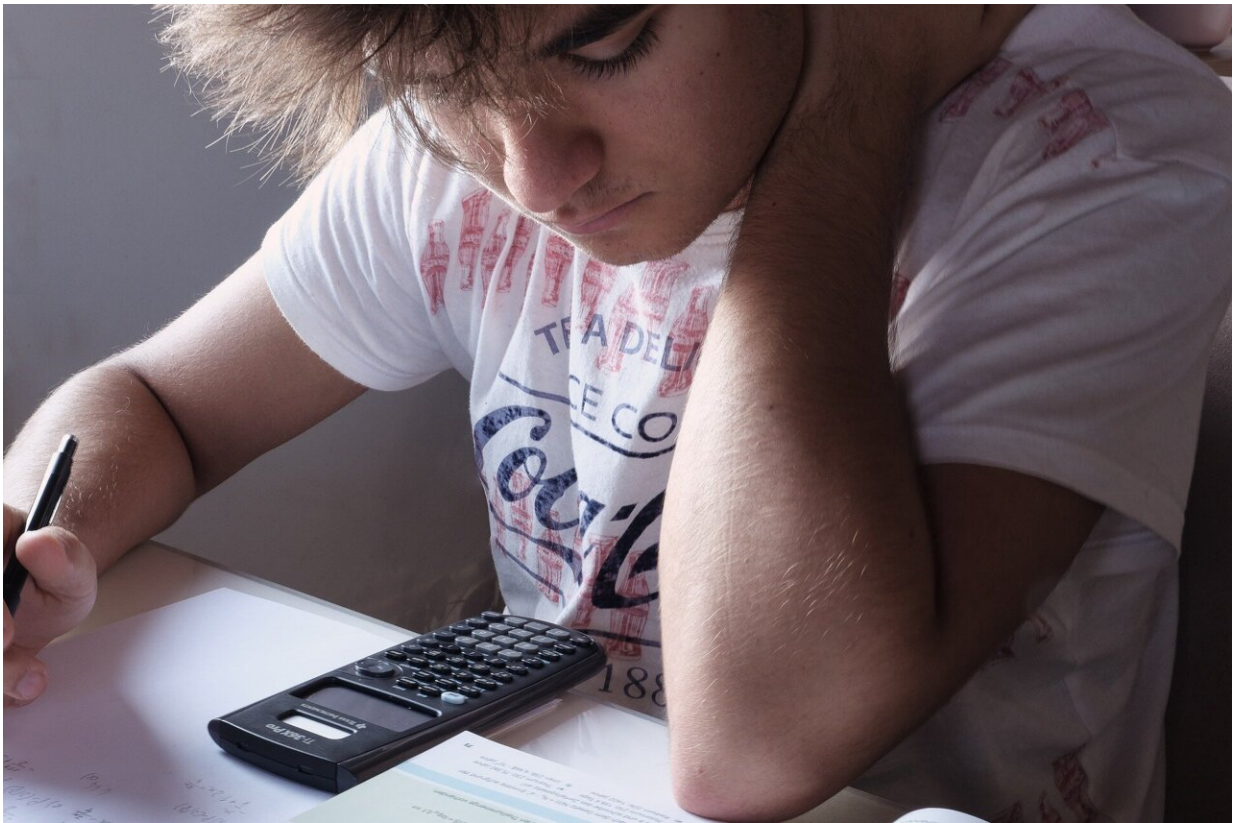


Study results suggest peers are crucial in shaping boys' confidence in math skills

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Boys are good at math, girls not so much? A study from the University of Zurich has analyzed the social mechanisms that contribute to the gender gap in math confidence. While peer comparisons seem to play a

crucial role for boys, girls' subjective evaluations are more likely to be based on objective performance.

Research has shown that in Western societies, the average secondary school girl has less confidence in her mathematical abilities than the average boy of the same age. At the same time, no significant difference has been found between girls' and boys' performance in mathematics. This phenomenon is often framed as girls not being confident enough in their abilities, or that boys might in fact be overconfident.

This math confidence gap has far-reaching consequences: self-perceived competence influences educational and occupational choices and [young people](#) choose university subjects and careers that they believe they are talented in. As a result, women are underrepresented in STEM (science, technology, engineering, math) subjects at university level and in high-paying STEM careers.

Peer processes provide nuanced insights into varying self-perceptions

A study from the University of Zurich (UZH) focuses on a previously neglected aspect of the math confidence gap: the role of peer relationships. The study is [published](#) in the journal *European Societies*.

"Especially in adolescence, peers are the primary social reference for individual development. Peer processes that operate through [friendship networks](#) determine a wide range of individual outcomes," said the study's lead author Isabel Raabe from the Department of Sociology at UZH. The study analyzed data from 8,812 individuals in 358 classrooms in a longitudinal social network analysis.

As expected, the main predictor of math confidence is individual math

grades. While girls translated their grades – more or less directly – into [self-assessment](#), boys with below-average grades nevertheless believed they were good at math.

Boys tend to be overconfident and sensitive to social processes

"In general, boys seem to be more sensitive to [social processes](#) in their self-perception – they compare themselves more with others for validation and then adjust their confidence accordingly," Raabe explains.

"When they were confronted with girls' self-assessments in cross-gender friendships, their math confidence tended to be lower." Peers' self-assessment was less relevant to girls' math confidence. Their subjective evaluation seemed to be driven more by objective performance.

Gender stereotypes did not appear to have negative social consequences for either boys or girls. "We found that confidence in mathematics is often associated with better social integration, both in same-sex and cross-sex friendships," said Raabe. Thus, there was no evidence of harmful peer norms pressuring girls to underestimate their math skills.

The results of the study suggest that [math skills](#) are more important to boys, who adjust their self-assessment in peer processes, while math confidence does not seem to be socially relevant for girls.

More information: Isabel J. Raabe et al, The gendered maths confidence gap, social influence and social integration, *European Societies* (2024). [DOI: 10.1080/14616696.2024.2349217](https://doi.org/10.1080/14616696.2024.2349217)

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