

Do boys and girls have similar attitudes towards competition and failure?

Programme for International Student Assessment





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- Girls underperformed boys in mathematics by just five score points in PISA 2018, on average across OECD countries, and outperformed boys by two score points in science. In 13 countries and economies, including high-performing countries Finland and Norway, girls significantly outperformed boys in mathematics.
- On average across OECD countries, two in three girls, but fewer than one in two boys reported that failure makes them doubt their plans for the future. Austria, Germany and the Netherlands were the OECD countries where girls expressed the least fear of failure, but still far more than boys in these countries expressed.
- In the majority of countries and economies that participated in PISA 2018, boys were more likely than girls to express positive attitudes towards competition, with the largest gender differences observed in France, Portugal, the United Kingdom and Uruguay.

While in most countries today women attain higher levels of education than men, on average, they are less likely than men to be employed and they earn less. There are many reasons why these gender gaps open; some are apparent in secondary school. For example, even when they outperform boys academically, girls are less likely than their male peers to choose the pathways through education and fields of study, such as science, mathematics or computing, that lead to the highest-paid professions. On average across OECD countries, only 14% of girls who were top performers in science or mathematics reported that they expect to work as professionals in science or engineering while 26% of top-performing boys so reported. That decision can have negative consequences for women's labour market prospects.

Self-efficacy and self-esteem may affect the choices teenagers make for their future education and career. Fear of failure may lead students to be selfprotective and thus avoid challenging situations and opportunities that are essential for learning and development. By contrast, a willingness to compete may influence the decision to take calculated risks. such as applying for admission to prestigious universities or for a higher position in a company.

Do today's boys and girls have different attitudes towards competition and failure?

On average, girls and boys scored within just a few points of each other in science and mathematics

While girls usually outperform boys in the PISA reading assessment by a large margin, in mathematics, boys tend to outperform girls. But the gender gap in mathematics in PISA 2018 was narrow - just five score points, in favour of boys, on average across OECD countries. Despite the stereotype that boys are better than girls at mathematics, boys significantly outperformed girls in mathematics in less than half of the 79 countries and economies that participated in PISA 2018. The largest gender gap in favour of boys was seen in Colombia, where boys scored around 20 points higher than girls; in Argentina, Costa Rica, Italy and Peru the gap was wider than 15 points. However, in 14 countries and economies, including the OECD countries Finland, Iceland, Norway and the Slovak Republic, girls outperformed boys in mathematics.

In science, girls outperformed boys by two score points in PISA 2018; and in around half of the countries/economies assessed, the gender gap in science performance was not statistically significant. In only six countries/economies was boys' performance in science significantly higher than that of girls; the opposite was observed in 35 countries and economies. The widest gender gaps in science performance, in favour of girls, were observed in

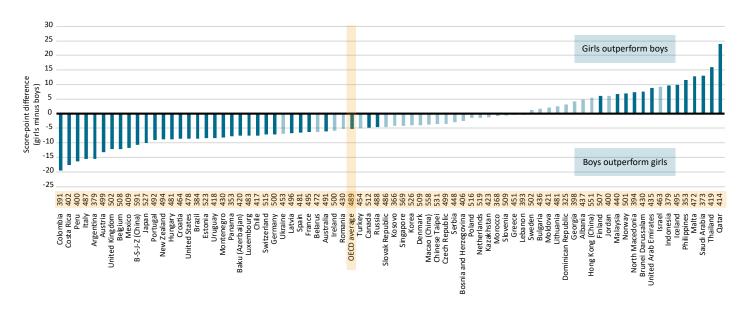
Qatar (a gap of 39 points), Jordan (29 points), Saudi Arabia (29 points) and the United Arab Emirates (26 points). In Albania, Bulgaria, the Dominican Republic, Finland, Georgia, Greece, Israel, Malta, the Republic of Moldova, the Republic of North Macedonia, Norway, Slovenia and Thailand, the gender gap in science performance, in favour of girls, ranged from 10 to 24 score points. By contrast, boys significantly outperformed girls in science in Argentina, Beijing, Shanghai, Jiangsu and Zhejiang (China), Colombia, Costa Rica, Mexico and Peru, where boys scored between 9 and 13 points higher than girls.

Girls reported more often than boys that failure makes them doubt their plans

In order to measure how students feel about failure, PISA 2018 asked whether they agree ("strongly agree", "agree", "disagree", "strongly disagree") with three statements. Students demonstrated a fear of failure when they agreed with these statements: "When I am failing, I worry about what others think of me"; "When I am failing, I am afraid that I might not have enough talent"; and "When I am failing, this makes me doubt my plans for the future".

In general, boys and girls seem to experience the fear of failure differently. In almost all PISAparticipating countries and economies, girls reported more often than boys, and to a greater extent, that they fear failure. Only in Saudi Arabia did boys report significantly more often that they fear failure, while boys and girls in Albania, Jordan, Lebanon, Montenegro, Panama and Qatar reported similar levels of fear of failure. On average across OECD countries, 64% of girls reported that when they fail, it makes them doubt their plans for the future, and 62% reported that failure makes them feel afraid that they might not have enough talent. By contrast, only 46% of boys agreed with each of the two statements. In Australia, Hong Kong (China), Ireland, Malta, New Zealand and the United Kingdom, more than three in four girls reported that failure makes them doubt their plans for the future, while fewer than one in four boys reported so. By contrast, in Austria, Germany and the Netherlands fewer than one in two girls reported that failure makes them doubt their plans – and boys in these countries are similarly confident. Excessive fear of failure may result in lower ambitions and a preference for pursuing more secure, but perhaps less rewarding, ventures.

Gender gap in mathematics performance



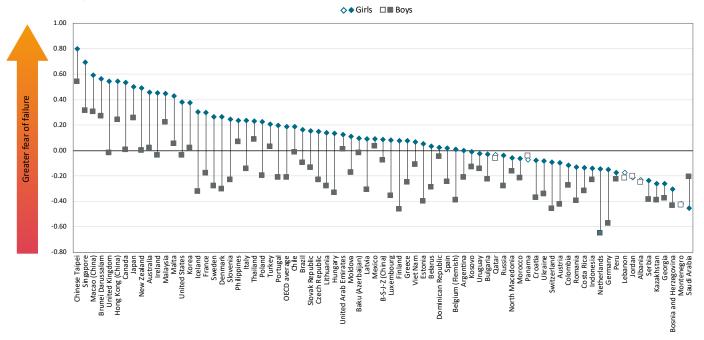
Notes: The mean score in mathematics is shown next to the country/economy name.

Statistically significant differences are marked in a darker tone (see Annex A3, PISA 2018 Results [Volume II]: Where All Students Can Succeed, OECD [2019]).

Countries and economies are ranked in ascending order of the score-point difference related to gender (girls minus boys).

Source: OECD, PISA 2018 Database, Table II.B1.7.3 and Table I.B1.5.

Gender gap in fear of failure



Notes: Statistically significant differences are marked by solid data points (see Annex A3, PISA 2018 Results [Volume II]: Where All Students Can Succeed, OECD [2019]).

Only countries and economies with available data are shown in this figure.

Countries and economies are ranked in descending order of the mean index of fear of failure amongst girls.

Source: OECD, PISA 2018 Database, Table II.B1.6.13.

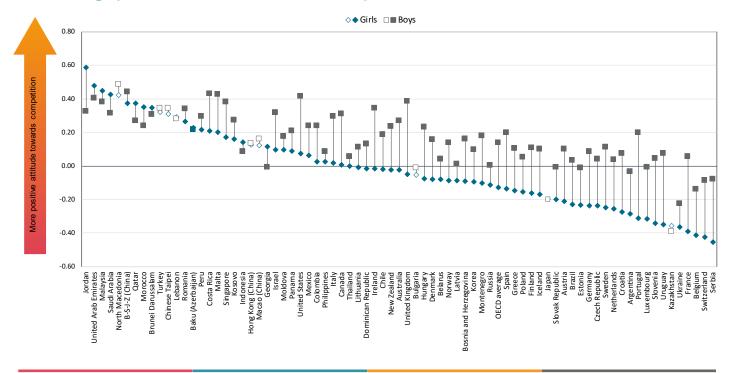
Girls reported positive attitudes towards competition less often than bovs

In order to measure students' attitudes towards competition, PISA 2018 asked whether they "agree", "strongly agree", "disagree" or "strongly disagree" with the following statements: "I enjoy working in situations involving competition with others"; "It is important for me to perform better than other people on a task"; and "I try harder when I'm in competition with other people".

In 64 of the 79 countries and economies that participated in PISA 2018, girls expressed less positive attitudes towards competition than boys did. On average across OECD countries, 69% of boys but only 53% of girls reported that they enjoy working in situations involving competition with others; 64% of boys but 56% of girls reported that it is important for them to perform a task better than other people; and 77% of boys but only 56% of girls reported that they try harder when they compete with other people. The gender gap is especially wide in France, Portugal, the United Kingdom and Uruguay, where girls were much less likely than boys to express positive attitudes towards competition.

However, in several countries, the gender gap towards competition was inverted. In Albania, Brunei Darussalam, Georgia, Indonesia, Jordan, Malaysia, Morocco, Qatar, Saudi Arabia and the United Arab Emirates, girls reported significantly more positive attitudes towards competition than boys. In 57 of the 79 countries that participated in PISA 2018, more than one in two girls reported enjoying competition; amongst OECD countries, in Australia, Canada, Colombia, Ireland, Italy, Mexico, New Zealand, Norway, Turkey and the United States, more than three in five girls so reported. These large differences between countries suggest that gender gaps in attitudes towards competition are not preordained. Feeling comfortable with competition could have a significant impact on students' life choices, such as the decision to pursue a more demanding, but ultimately more rewarding, education. Thus early interventions that promote girls' selfconfidence and willingness to compete could help narrow gender gaps, in school and in adult life.

Gender gap in attitudes towards competition



Notes: Statistically significant differences between boys and girls are marked by solid data points (see Annex A3, PISA 2018 Results [Volume II]: Where All Students Can Succeed, OECD [2019]).

"Attitudes towards competition" represents the competitiveness of the student and not the perception of competitiveness at school. Countries and economies are ranked in descending order of the mean index of attitudes towards competition amongst girls.

Source: OECD, PISA 2018 Database, Table II.B1.8.14.

The bottom line

Girls' relative lack of self-confidence, compared to boys, and their relative discomfort with competition may explain the pervasive gender gap in wages and in the under-representation of women in high-wage positions amongst adults. Yet differences between countries suggest that gender gaps in attitudes towards competition are not preordained. Parents' and teachers' support of and interest in their students, and school policies and practices, can help shape students' perceptions of their own strengths. Closing gender gaps in the labour market requires that all parents, educators and employers become more aware of their own assumptions and conscious or unconscious biases. By doing so, they will be able to provide girls and boys with the appropriate support, and ensure that success at school and beyond is gender blind.

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Coming next month: PISA for Development Results in Focus: Out-of-school Youth

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