



What progress have countries made in closing gender gaps in education and beyond?

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- Boys are better at mathematics and girls at reading. These stereotypes emerge from an early age and are persistent at school, despite the many measures taken to reduce the gaps. Later in life, the gender gap in mathematics tends to increase, while girls' advantage in reading tends to disappear.
- There is a strong negative correlation across OECD countries between gender gaps in mathematics and reading. In other words, countries with a wider gap in reading in PISA 2022 tend to have a narrower gap in mathematics, and vice versa.
- Boys' lower performance in reading translates into greater difficulties in obtaining an upper secondary qualification. However, although girls now outnumber boys in tertiary education in all countries, they remain under-represented in the most sought-after fields in the labour market.
- Although some progress has been made over the last decade, women still experience lower employment rates and often receive lower salaries than men with similar levels of education.

Gender inequality in education and beyond is a hotly debated topic in most countries, even more so on 8 March, International Women's Rights Day. It is also the subject of numerous publications and high-level meetings within the OECD ((OECD, 2023^[1]) and (Encinas-Martín, M. and M. Cherian, 2023^[2])). Education policies that favour equality have also proliferated in recent decades, both during and after education, but have they been effective? What are the current trends, and what indicators are used to measure progress and disparities between countries?

Gender gaps in reading performance and, to a lesser extent, in mathematics begin at a very young age

Results from the 2022 Programme for International Student Assessment (PISA) confirm the persistence of gender disparities: 15-year-old girls outperform boys by an average of 24 points in reading (roughly equivalent to one year's schooling), while boys have a 9-point advantage in mathematics (OECD (2023^[3])). Although these average gaps have been constant since 2015, they vary considerably from country to country. For example, in Finland, Norway and Slovenia, 15-year-old girls outperform boys by more than 40 points in reading, while in Chile, Mexico and Peru, the gap is less than 10 points (Figure 1).

Differences in reading performance between boys and girls appear well before the age of 15 in all OECD countries, according to the 2021 Progress in International Reading Literacy Study (PIRLS) which assessed students in the fourth year of primary school (IEA, 2023^[4]). The difference is less pronounced for mathematics at that age, with only half of OECD countries recording significant gaps according to the 2019 Trends in International Mathematics and Science Study (TIMSS) (IEA, 2020^[5]). The widest gaps were in Canada, France, Italy, Portugal, the Slovak Republic and Spain. In France, a recent study even found detectable gaps between boys and girls in mathematics as early as the end of the first semester of the first year of primary school, even though students started the year with the same level in mathematics (Breda, Sultan Parraud and Touitou, 2024^[6]).

This is not without consequences, particularly in mathematics, since data from the Programme for the International Assessment of Adult Competencies (PIAAC), although somewhat dated, show that gender gaps in numeracy increased once adults are in employment. Conversely, although girls perform better in reading at school, this advantage disappears later in life according to PIAAC study, which indicates that it is also partly a question of reading practice and behaviour at school, rather than a problem of skills (Encinas-Martín, M. and M. Cherian, 2023^[2]).

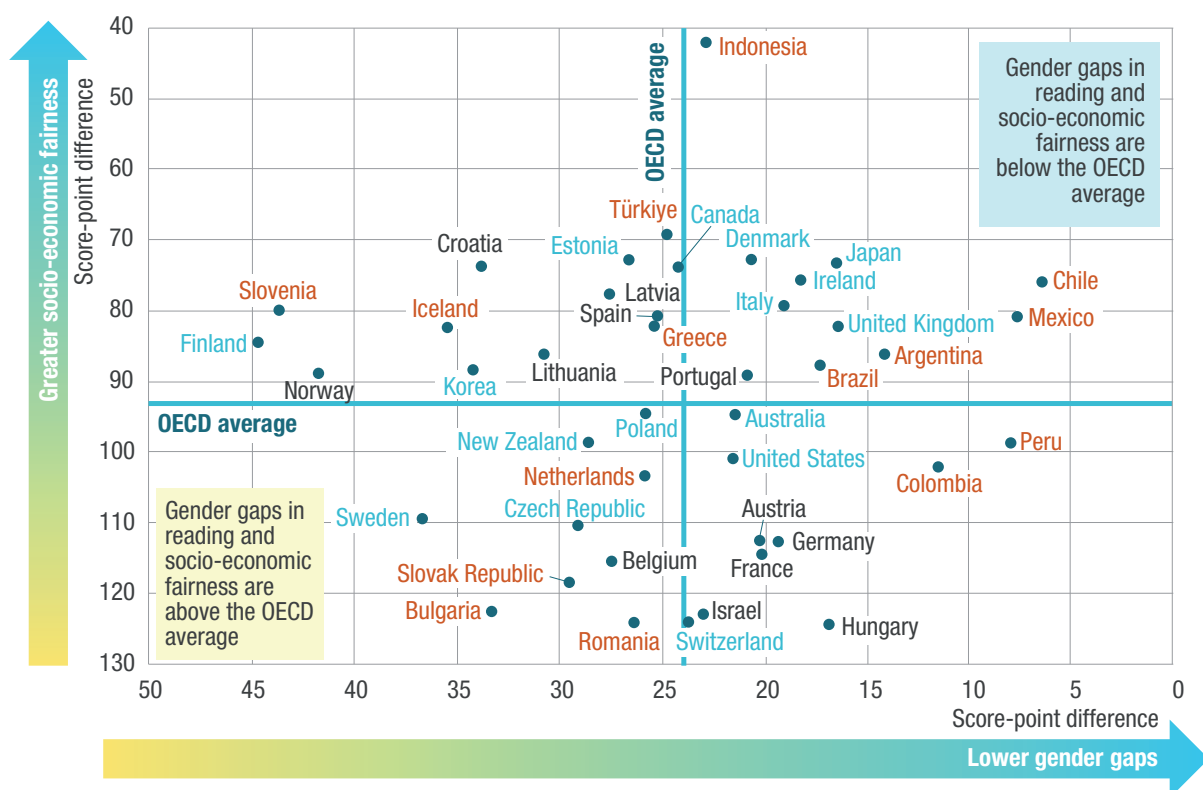
Results like these, particularly regarding reading proficiency in primary and secondary education, have prompted many countries to take action. For example, Australia has modified its school textbooks to include programmes focused on engaging boys in reading, while Canada and Sweden, to name just two, have trained their teachers to fight against gender stereotypes. In the United States, the Reach Out and Read programme involves families in a more holistic process, encouraging them to make reading part of their daily routine with their children from an early age, to encourage language development and a positive relationship with books and reading.

Gender gaps and social inequality are not related in straightforward ways

There are two misconceptions about gender gaps in reading and mathematics. The first is that countries with gender inequalities would also have strong social inequalities in their education systems. But this is often not the case, and there is no proven correlation between social and gender equity (Figure 1). For example, among the countries with above-average reading performance in the PISA survey (shown in blue in Figure 1), only Denmark, Italy, Ireland, Japan and the United Kingdom have narrower gaps in reading performance both between disadvantaged and advantaged students and between boys and girls compared to the OECD average. The reverse is also the case, with few countries in the bottom left quadrant indicating wider gaps for both dimensions.

Figure 1. Gender gaps and social fairness in reading performance (2022)

Countries in blue have above-average reading performance. Countries in red have below-average reading performance. Countries in black have reading performance equivalent to the OECD average.



Note: A socio-economically disadvantaged (advantaged) student is a student in the bottom (top) quarter of the PISA index of economic, social and cultural status (ESCS) in his or her own country. Horizontal axis shows score-point difference in reading between disadvantaged and advantaged students. Vertical axis shows score-point difference in reading between boys and girls.

Source: OECD (2023^[9]), *PISA 2022 Results (Volume I): The State of Learning and Equity in Education*, <https://doi.org/10.1787/53f23881-en>, Tables I.B1.2.1, I.B1.2.2 and I.B1.4.3.

The second misconception is that countries with smaller gender gaps in reading would also have smaller gaps in mathematics. In fact, the opposite is true: there is a strong negative correlation across OECD countries between gender gaps in mathematics and reading (-0.72 in PISA 2022). In other words, countries wider gap in mathematics tend to have a narrower gap in reading, and vice versa. For example, all the five countries mentioned above except Japan have wider gender gaps in mathematics (in favour of boys) than the OECD average.

These results can be explained in part by the learning difficulties boys might be encountering in countries where there are large gaps in reading performance. These same difficulties could also be affecting their performance in mathematics, narrowing the performance gap with girls in this subject compared with other countries. It should be noted, however, that gender gaps are often relatively small compared to other disparities that can be observed both during and after education, particularly when the indicators are broken down by socio-economic background of students and adults, by place of residence or by age group.

Gender inequalities in education have a major impact on completion and choice of studies, both in secondary and tertiary education

Boys' relatively poor reading performance has an impact on upper secondary completion rates. After all, if you have trouble with reading, you often have trouble with other subjects. In all OECD countries, girls' completion rate for upper secondary education is higher than boys'. This applies to both vocational and general programmes, with the only exceptions being Lithuania and Sweden, for vocational programmes. On average, the gender gap in completion rates is the same for both general and vocational programmes, amounting to 7 percentage points.

This partly explains why, in all OECD countries except the Republic of Türkiye, young men (25-34 year-olds) are today more likely than young women to have left education without attaining an upper secondary qualification. On average across OECD countries 16% of young men did not attain upper secondary education, compared to 13% of young women. The gender gap reaches 10 percentage points or more in Iceland and Spain. A similar trend is found in tertiary education, with young women in all OECD countries more likely to earn a tertiary qualification than their male peers. On average in the OECD, 52% of young women had attained tertiary education in 2020, compared to only 39% of young men, and this gender gap in favour of young women widened between 2010 and 2020 in most countries. Today, there are almost 1.4 women for every man leaving education with a tertiary qualification, which could have an impact on the labour market in the future (OECD (2023^[8]), Indicator A1).

While boys' difficulties in reading might influence their completion of secondary education, girls' difficulties in mathematics might influence the type of secondary education programme they pursue and their field of study in tertiary education. Women are less likely than men to pursue vocational education and training (VET) in secondary or tertiary education. On average, in OECD countries, only 45% of students enrolled in upper secondary vocational education programmes are women, a similar proportion to that of ten years ago. However, there are significant variations from country to country: in 2020 the share of female students ranged from less than 38% in Germany, Greece, Iceland, India, Italy and Lithuania to over 55% in Brazil, Costa Rica and Ireland.

Girls are also under-represented in the fields of science, technology, engineering and mathematics (STEM) and over-represented in certain other fields such as education and health and welfare. This is a cause for concern, as STEM qualifications are in particularly high demand in the labour market. Only 31% of new entrants to STEM programmes are women, compared with over 75% in both education and health and welfare. The proportion of female STEM entrants only exceeds 40% in Iceland and New Zealand, while it is less than 25% in Belgium, Chile and Japan (Figure 2).

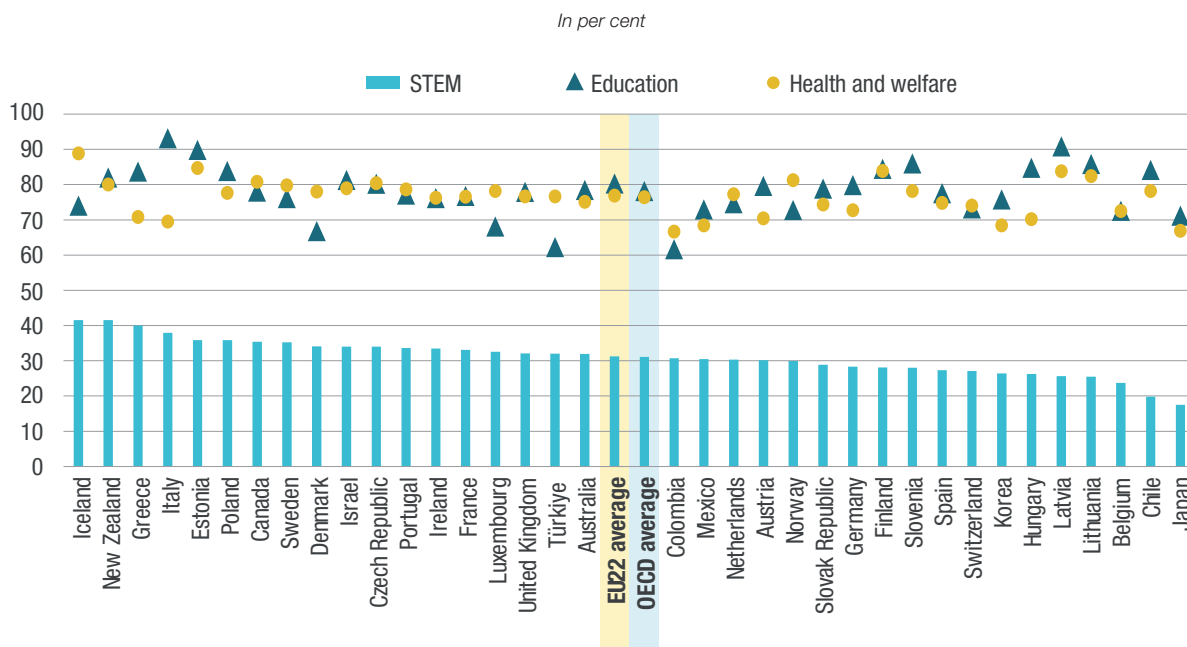
Numbers like these have prompted these countries (and others as well) to take major steps to improve the situation. In Chile, for example, the Women Who Code Chile programme aims to encourage girls to take an interest in programming and technology. In Japan, the Supporting Women in Science programme aims to encourage women to pursue scientific careers by offering research grants, scholarships and professional development opportunities, while the Women in Science Network programme provides networking, mentoring and support opportunities for women working in scientific fields in Japan.

Inequalities between men and women persist in the labour market, despite slight progress over the past decade

Once they leave the world of education, women often face obstacles on the job market, such as wage discrimination, social expectations about their family and professional roles, and under-representation in certain employment sectors (in part related to different choices of field of study shown in Figure 2). However, the gender employment gap narrows for those with the highest levels of education. Employment rates are particularly low for young women with below upper secondary education. On average, across OECD countries, the employment rate for women aged 25-34 who have not attained upper secondary education is 47%, compared with 71% for their male counterparts, a gap of 24 percentage points.



Figure 2. Share of women among new entrants to tertiary education, by selected fields of study (2020)



Note: STEM refers to the fields of science, technology, engineering and mathematics.

Countries are ranked in descending order of the share of women among tertiary new entrants in STEM.

Source: OECD dashboard on equity in and through education, Indicator 18, <https://www.oecd.org/education/education-equity-dashboard/>.

The relationship between educational attainment and employability is far from straightforward. Thus, although unemployment rates are relatively similar between tertiary-educated men and women, women with a tertiary qualification are much more numerous than men among the inactive (i.e. people who have no job and are not looking for one), which may indicate the existence of cultural expectations. Even among tertiary graduates, only in Portugal young women have better employment rates than young men, even though women are more likely than men to have achieved tertiary education in all OECD countries (Figure 3). This phenomenon is particularly marked in Colombia, Czechia, Estonia, Korea, Poland and the Slovak Republic, where the employment rates of female tertiary graduates aged 25-34 are at least 6 percentage points lower than their male counterparts, while the proportion of young women who attained tertiary education is at least 10 percentage points higher.

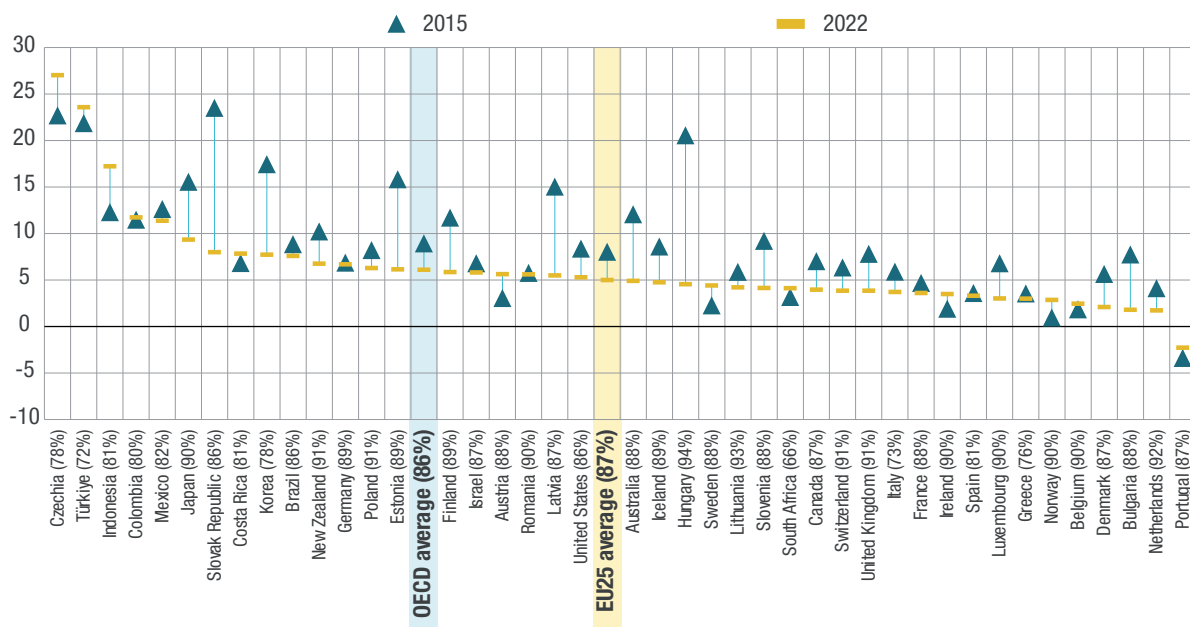
On a positive note, the gender gap in the employment rate of 25-34 year-olds with tertiary qualification narrowed between 2015 and 2022 in around two-thirds of OECD countries, and on average from 9 to 6 percentage points (Figure 3). Estonia, Hungary, Japan, Korea, Latvia and the Slovak Republic, have made the most progress over this period, often thanks to strong measures. The Korean and Estonian governments, for example, have introduced policies aimed at reconciling work and family life, while Hungary has used initiatives to encourage women to pursue studies in fields traditionally dominated by men.

As well as finding it harder than men to get a job, women also tend to earn less when they do. Even among full-time full-year workers aged 25-34 with tertiary qualification, women's relative pay is around 84% of that of men in OECD countries. Here too, however, slight progress has been made, with the gap narrowing by 3 percentage points between 2015 and 2022 (OECD (2023_[8]), Indicator A4).

Despite slight progress, more needs to be done. Even today, women who sometimes study in the same fields as men (ICT, to name but one) face lower employment rates and wages than men. That is why there is still a long way to go to achieve gender equality in both education and the labour market.

Figure 3. Trend in gender disparities in employment rates among 25-34 year-olds with tertiary attainment (2015 and 2022)

In percentage points; employment rates of men minus employment rates of women



Note: The percentage in parenthesis is the employment rate among 25-34 year-olds with tertiary attainment in 2022. Countries are ranked in descending order of the gender gap in employment rates among 25-34 year-olds with tertiary attainment in 2022.
Source: OECD (2023^[9]), *Education at a Glance 2023*, <https://doi.org/10.1787/e13bef63-en>, Table A3.3.

The bottom line

Despite numerous measures, gender stereotypes about abilities in mathematics and reading persist in schools, affecting both boys' and girls' schooling and educational choices. Inequalities also persist outside the classroom, where women, despite greater educational attainment, experience lower employment rates and often receive lower salaries than men with similar levels of education. Nonetheless, the many measures taken by countries have brought some encouraging signs of progress. However, more work is needed to ensure that improvements in education are also reflected in improvements once boys and girls transition into the world of work.

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