

CO12: Literacy scores by gender at age 15

Definitions and methodology

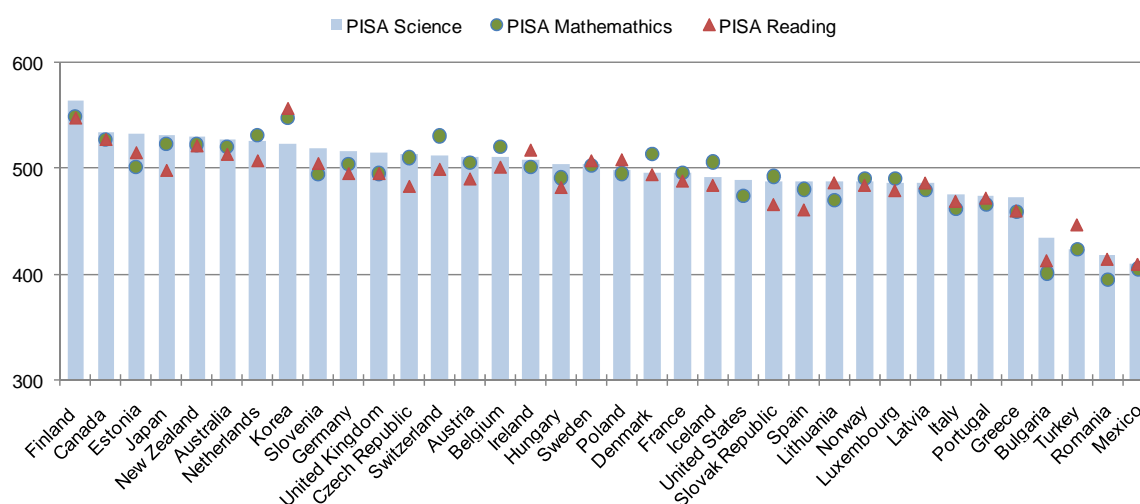
The OECD's Programme for International Student Assessment (PISA) evaluates how students at age 15 (when approaching the end of compulsory schooling) perform in the skill sets of reading, mathematics, and scientific literacy. Reading literacy in PISA tests the ability to decode text and grammatical structures and also asks students to identify different types of text and relate them to the contexts in which they appear. Mathematical literacy evaluates student's capacity to identify, understand and engage in mathematics. Scientific literacy examines student's capacity to use scientific knowledge and to draw evidence-based conclusions.

The first PISA assessment took place in 2000 when the main assessment domain was reading literacy; in 2003 the focus was on mathematics; and in 2006, the focus of study was on scientific literacy. Future surveys are scheduled for 2009, 2012 and 2015.

Key findings

PISA scores varied widely across OECD countries in 2006 (Chart CO12.1). With scores above 530 points out of a maximum 600, students in Canada, Finland, Japan and New Zealand had the highest scores in scientific literacy (Canadian and Japanese children, aged around 10 years-old, also were among the top-performers in scientific literacy as assessed by the TIMSS study (CO11)). By contrast, average science literacy scores for Mexican and Turkish students were low at less than 430 points. In general, the ranking of countries and the gap between high-performing and low-performing countries is rather similar for reading and mathematical literacy, except for Korea, where students score rather better in mathematics and science than reading literacy.

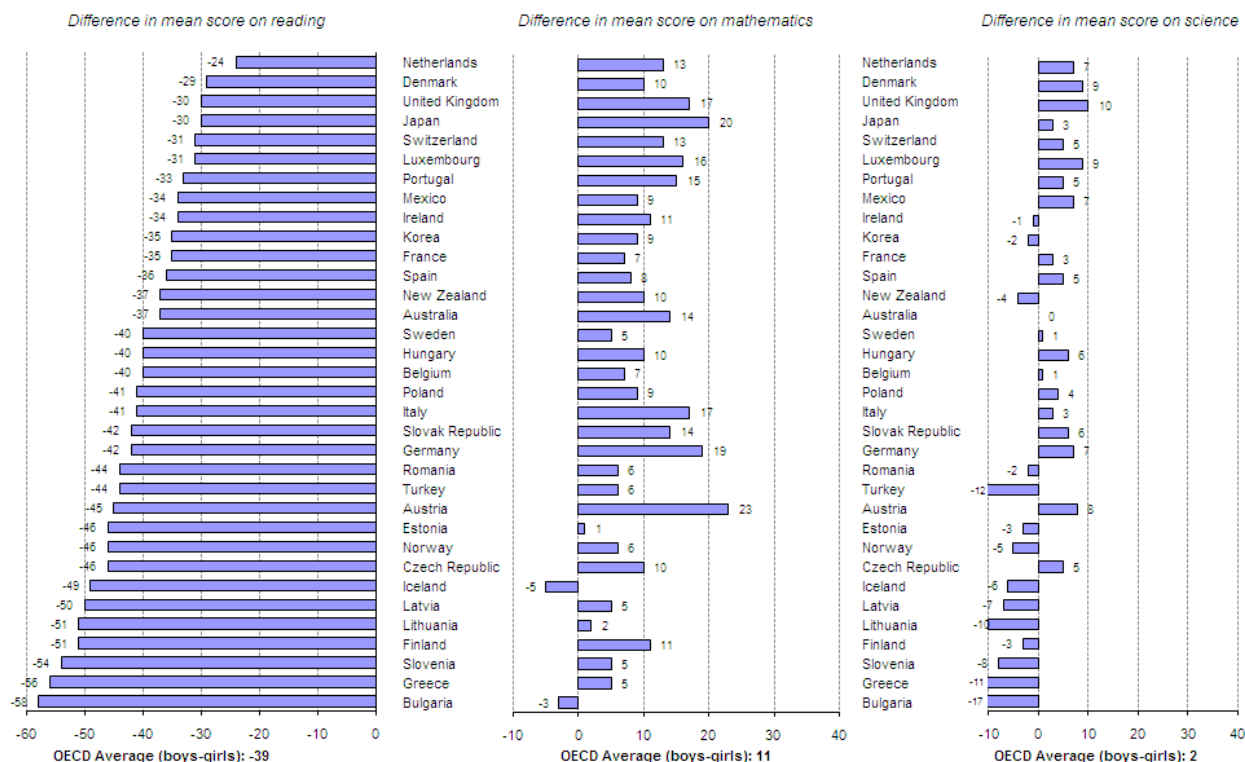
Chart CO12.1: Student performance in reading, mathematics and science - PISA 2006



Other relevant indicators: CO9: Educational attainment by gender and average years spent in formal education; CO10: Gender differences in university graduates by field of study; CO11: Literacy scores by gender at age 10; CO13: Youths not in education or employment; and, PF2: Public spending on education.

Chart CO12.1 presents significant gender differences among 15-year olds in the mean scores of the reading, mathematics and science literacy scales. There are significant gender differences: young female students across OECD countries perform better in reading literacy than their male peers, while boys perform better in mathematics. On average, boys have slightly better science literacy scores than girls, but the difference is relatively small and in 14 out of 19 countries girls score better than boys. This result is comparable with science literacy test-results for boys and girls age 10, see CO11.

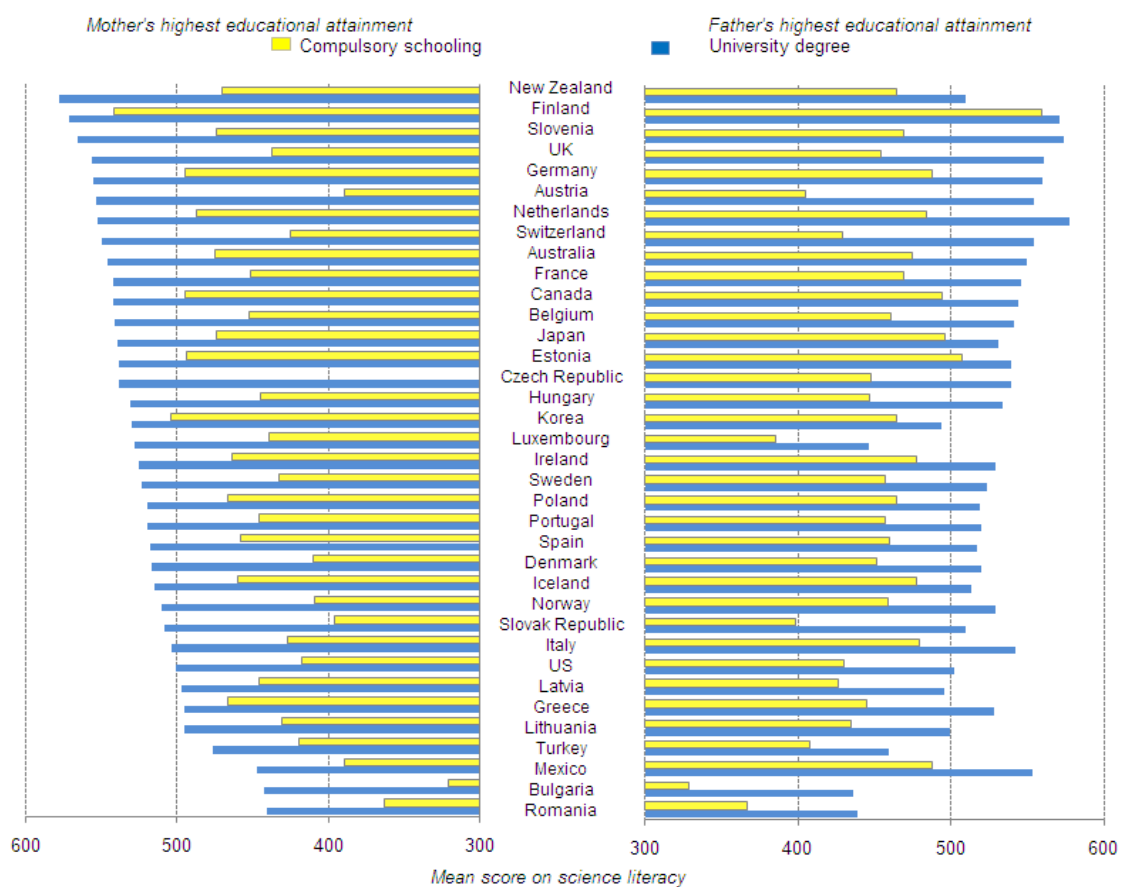
Chart CO12.2: Gender differences (boys - girls) in student performance in reading, mathematics and science in PISA 2006



Literacy scores vary according to other factors:

PISA also tries to identify factors which explain the differences in scores across students. These factors include attendance in pre-school education, the labour market status of parents and educational attainment of the student’s parents. Available information on the latter shows that students, whose parent(s) have a university degree, perform significantly better on the science literacy scale (this also holds when considering maths and reading literacy) than students whose parent(s) have completed compulsory only (Chart CO12.3).

Chart 12.3: Mean scores on science literacy scale relative to educational attainment of parents, PISA 2006



The International Standard Classification of Education (ISCED) is used to define levels of education (Annex 3 of OECD Education at a Glance). Compulsory education refers to ISCED 1 and university degree to ISCED 3A, except for the Czech Republic, Germany, Estonia, Hungary, Iceland, Japan, Latvia Poland, Slovak Republic where compulsory education concerns ISCED 2 (small sample sizes for ISCED 1).

Comparability and data issues

The PISA assessment process devotes substantial efforts and resources to achieving cultural and linguistic balance in the assessment materials, to provide students with equal chances of successful performance. Stringent quality assurance mechanisms are applied in translation, sampling and data collection. If countries fail to meet sampling size requirements they will be omitted from the published international comparisons (e.g., the Netherlands in 2000 and the United Kingdom in 2003). In 2006, reading tests in the United States were excluded from the report due to a fieldwork error that could have affected student performance.

More than 400 000 15-year old students in 57 countries were assessed for PISA 2006. Because the results are based on probability samples, the standard errors of the estimates can also be calculated and can be found on the OECD PISA website.

Sources and further reading: the PISA website www.pisa.oecd.org has all information relating to the programme including an interactive database, copies of the questionnaires and all associated publications and reports. For information on The International Standard Classification of Education (ISCED), see OECD Education at a Glance 2008 (www.oecd.org/edu/eag2008).