4. Student performance

Definition and measurement

Student performance can be assessed through results from the OECD Programme for International Student Assessment (PISA). PISA is the most comprehensive international effort to measure the skills of students towards the end of the period of compulsory education. In the latest results, 15-year-old students across the OECD did tests in reading, mathematics and science in 2006 (the United States is not included in the reading test). In PISA comparable tests are administered under independently supervised conditions in order to assess students' competencies. PISA tests are not tied to specific national curricula. Rather, students apply knowledge to situations they might encounter in the real word, such as planning a route, interpreting the instructions for an electrical appliance, or taking information from a figure. For each subject the average score across OECD countries is 500 for the first time it becomes a major domain in PISA. Thereafter the OECD average reflects the performance of the OECD countries.

PISA results from the 2006 wave in reading can be compared to those from the 2000 wave, which gives the longest period for consideration of time trends (science and maths results are, unfortunately, not comparable over this longer time period).

In addition to the mean test scores for students in each country in the three subjects, a measure of inequality in test scores within countries, the coefficient of variation (defined as the country standard deviation divided by the average score), is also used.

Poor student performance at age 15 can have lasting life cycle implications for young people. Poor learning outcomes lead to a higher probability of dropping out of school, worse longer term career and relationship prospects, and greater probability of long term welfare dependence. Thus ensuring that children get a good education is a policy priority in all OECD countries. All countries spend large but varying amounts of public money to ensure that youngsters are educated. Student performance in the PISA tests indicates the cumulative effect of educational inputs from family, schools, peers and the community up to age 15. While test score performance is not the only indicator of successful schooling (socialisation is clearly an important goal, for example), it is almost universally regarded as a highly important measure.

Cross-country differences in the performance of students towards the end of compulsory schooling are large (SS4.1). Differences between the top country (Korea for reading, Finland for maths and science) and the bottom country (Mexico) exceed 140 points, which is nearly one and a half standard deviations. SS4.1 also illustrates a strong tendency for countries which do well in reading to also do well in maths and science. Country correlations between reading, mathematics and science scores are all in excess of 0.87.

The reading gender gap in favour of girls has been rising over time. Gender gaps in reading scores are increasing across almost all the OECD countries over the period 2000-06 (SS4.2). While in the majority of country cases this rise is not statistically significant, the fact that the trend is found in all but two countries suggests systematic changes may be occurring in favour of girls. The 2006 results also confirm, contrary to the reading result, boys do better than girls in maths. Science is a mixed bag. Unfortunately the maths and science gender gaps cannot be compared over the same period.

Countries where average reading test scores have *grown* between 2000 and 2006 have also seen *reductions* in their test score *inequality* (SS4.3). The correlation between the change in reading scores and the change in reading score inequality (measured by the coefficient of variation of reading scores), is –0.52. Previous editions of *Society at a Glance* had shown that countries with high average PISA scores levels also have low test score level inequality and *vice versa*.

Further reading

OECD (2003), *Literacy Skills for the World of Tomorrow: Further Results from PISA 2000*, OECD, Paris.

OECD (2007), *PISA 2006: Science Competencies for Tomorrow's World*, OECD, Paris (*www.pisa.oecd.org*).

Figure notes

Figure SS4.1: PISA: OECD Programme for International Student Assessment. Countries are ranked, from top to bottom in decreasing order of student performance in mathematics.

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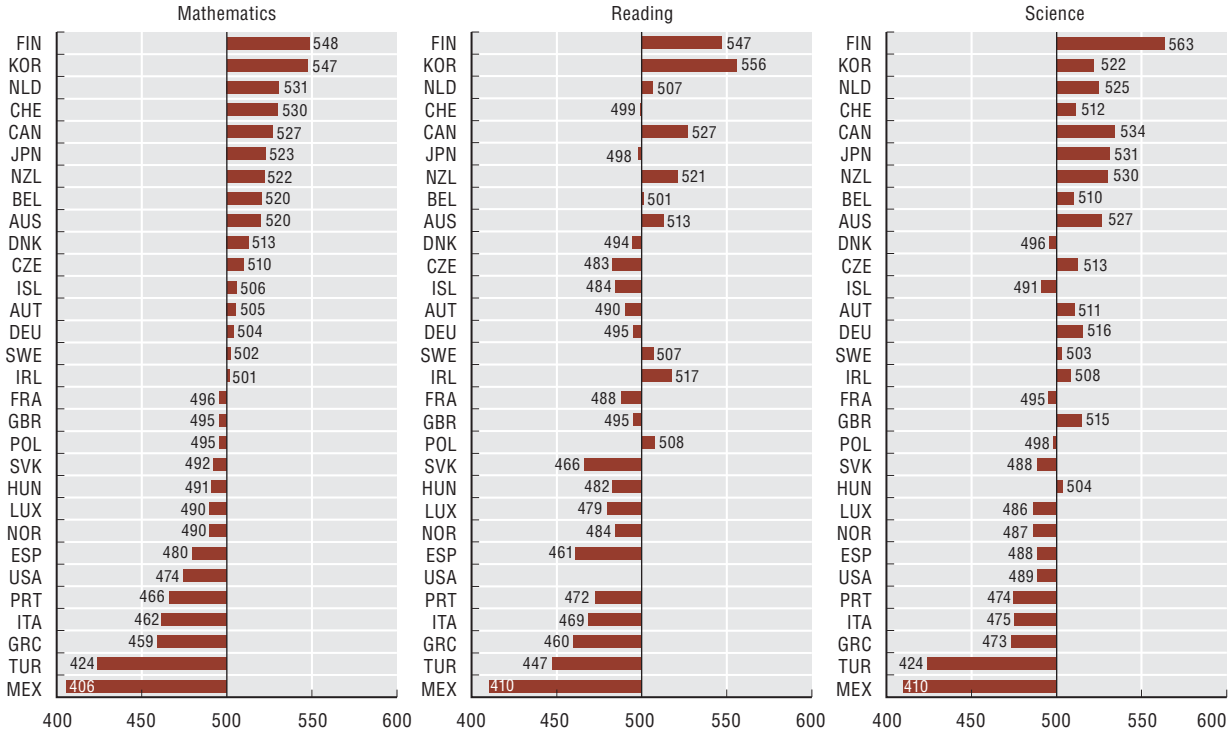
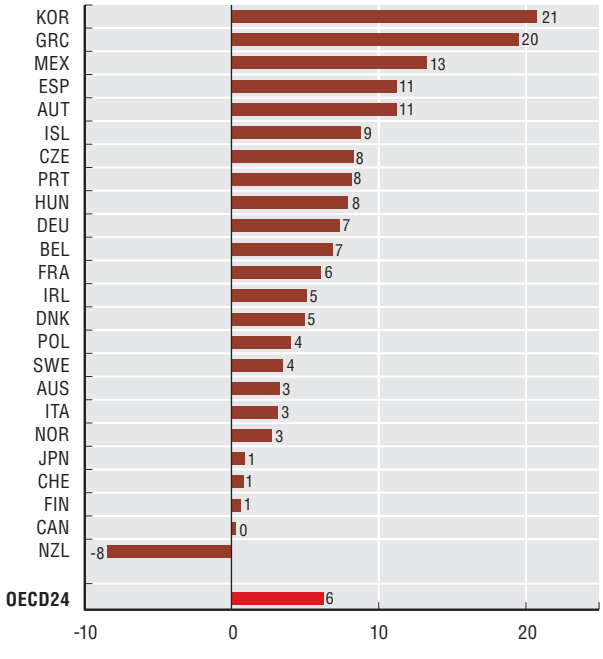
SS4.1. Large differences in students' performance among OECD countries

Mean scores on the mathematics, reading and science scales, PISA 2006



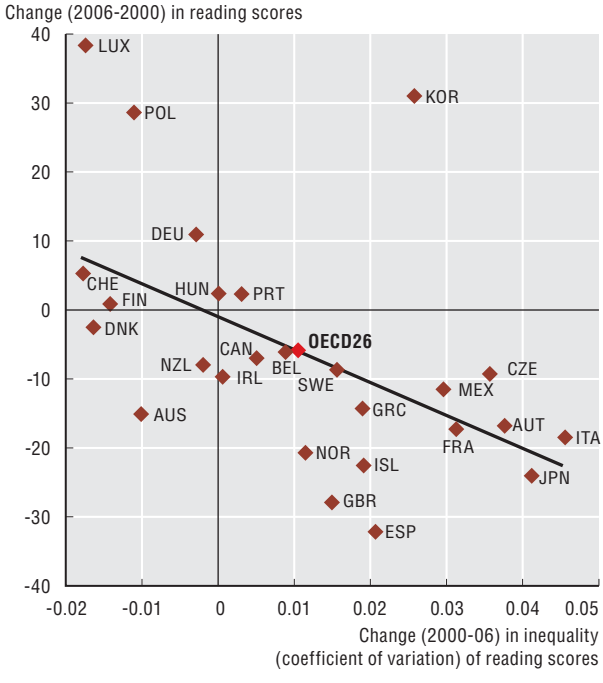
SS4.2. Gender gaps in favour of girls in reading are rising

Changes in gender differences in reading (female less male scores) between 2000 and 2006, points



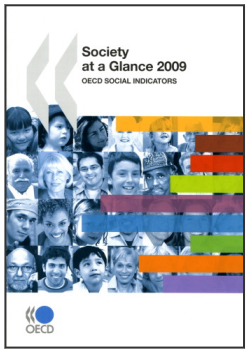
SS4.3. Countries with rising average reading test scores have reductions in test score inequality

Changes in average reading scores and changes in the coefficient of variation of reading scores



Source: OECD (2007), *PISA 2006: Science Competencies for Tomorrow's World*, OECD, Paris (*www.pisa.oecd.org*).

StatLink http://dx.doi.org/10.1787/550180640382



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