Top-performer Finland Improves Further in PISA Survey as Gap between Countries Widens

Finland once again came out top in the OECD’s latest PISA study of learning skills among 15-year-olds, with high performances in mathematics and science matching those of top-ranking Asian school systems in Hong Kong-China, Japan and Korea. But some low-performing countries showed only small improvements or actually did less well, widening the gap between the best and poorest performers.

More than 250,000 students in 41 countries took part in PISA 2003, the second three-yearly survey of its kind. The survey involves pencil and paper tests lasting two hours, taken in the students’ schools. The main focus in PISA 2003 was on mathematics, but the survey also looked at student performance in problem-solving, science and reading and at students’ approaches to learning and attitudes to school.

Finland already led in the PISA 2000 reading assessment, and in PISA 2003 it maintained its high level of reading literacy while further improving its performance in mathematics and science. In mathematics, where the PISA 2003 tests sought to establish how well students can develop and apply mathematical models to deal with real-life tasks and interpret, validate and communicate the results, top-performing OECD countries also include the Netherlands.

Most other countries’ relative positions in the PISA 2003 survey remained broadly similar to those in PISA 2000, but some showed notable changes. Poland’s overall performance rose thanks to big improvements among lower-performing students in the wake of a major reform of the education system in 1999. Smaller but still noteworthy improvements in at least two assessment areas also occurred in Belgium, the Czech Republic and Germany.

Overall, wealthier countries tend to do better in educational terms than poor nations, but there are exceptions: Korea’s national income, for example, is 30 per cent below the OECD average but its students are among the best performers in OECD countries. Nor is high expenditure necessarily a key to success: a number of countries do well in terms of “value for money” in their education systems, including Australia, Belgium, Canada, the Czech Republic, Finland, Japan, Korea and the Netherlands, while some of the “big spenders” perform below the OECD average. (Data for the United Kingdom are not included, due to insufficient response rates of students and schools. In PISA 2000, data for the Netherlands were excluded for the same reason).

The results of PISA 2003 suggest that both students and schools perform best in a climate characterised by high expectations that are supported through strong teacher-student relations, students who are ready to invest effort and who show interest and lower levels of anxiety with mathematics, and a positive disciplinary climate. In most of the countries that performed well, local authorities and schools also have substantial responsibility for educational content and/or the use of resources, and many set out to teach homogeneous groups of learners.

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PISA also benchmarks educational quality against other important dimensions:

- Students whose parents have better-paid jobs, are better educated and have more “cultural” possessions in their homes perform on average significantly better in all countries than those without such advantages. However, the degree of difference varies. Australia, Canada, Finland and Japan stand out for high standards of both quality and equity, with above-average mathematics performance and below-average impact of socio-economic background on student performance. In contrast, results for Belgium, Germany, Hungary and the Slovak Republic reveal large socio-economic inequalities in the distribution of educational opportunities.

- In Canada, Denmark, Finland, Iceland, Ireland, Norway, Poland and Sweden, parents can rely on high and consistent standards across schools. By contrast, variations in student performance in Austria, Belgium, Germany, Hungary, Italy, Japan, the Netherlands and Turkey are largely accounted for by performance differences between schools. In Poland, the differences between individual schools’ performances have shrunk since PISA 2000, possibly reflecting the introduction of a more integrated school system in 1999.

- Since some countries allocate students to schools according to their prior educational performance, some differences in average school performance are there by design. However, it is worrying to find large differences between schools, particularly in the countries with highly stratified and early selective systems, that are linked to socio-economic inequalities in learning opportunities. Peer-group influences may be one factor helping to raise the performance of pupils attending schools with higher socio-economic status. But better school resources and a more positive school climate also seem likely to play a part.

- While girls outperform boys in reading in all countries, gender differences in mathematics tend to be small. Most countries have more boys among top performers, resulting in a slight overall advantage for boys over girls in average terms. But boys and girls tend to be equally represented among the low-performers.

- Gender differences are larger within schools than they are overall. Girls attend the higher performing, academically oriented tracks and schools at a higher rate than boys but, within schools, girls often perform significantly below boys. Of more concern, girls consistently report lower interest in and enjoyment of mathematics, lower levels of self-confidence and higher levels of anxiety with mathematics, all of which continues to be reflected in subsequent study and occupational patterns. If girls are to be encouraged to go on to study mathematics and related subjects at a higher level, schools will need to do more to build their interest and confidence in mathematics from an early age.

- Student interest in mathematics is far lower, across countries, than in reading. Among OECD countries, about half of the students report being interested in the things they learn in mathematics, but only 38 per cent report that they do mathematics because they enjoy it. On the other hand, the great majority of students believe that studying mathematics will help them in their future.

- At the upper end of the scale, in Belgium, Japan and Korea between 8 and 9 per cent of students – more than double the OECD average - were able to perform the highly complex tasks required to reach Level 6, the top performance level, in mathematics. At the other end of the scale, over a quarter of students are not proficient beyond Level 1 in Italy, Portugal and the United States, over a third in Greece and over half in Mexico and Turkey.

   Journalists seeking further information or a copy of the report are invited to contact the OECD’s Media Relations Division (tel. 33 1 45 24 97 00 or news.contact@oecd.org).