

PISA

IN FOCUS 12

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Are boys and girls ready for the digital age?

- More than 17% of students in Australia, Korea and New Zealand are top performers in digital reading, while fewer than 3% of students in Austria, Chile and Poland are.
- On average, girls outperform boys in digital reading; however, the gender gap is narrower than it is in print-reading proficiency.
- Among boys and girls with similar levels of proficiency in print reading, boys tend to have stronger digital navigation skills and therefore score higher in digital reading.

Information and communication technologies revolutionise not only the speed at which information can be transmitted, but also how information is conveyed and received. Technological innovations have a profound effect on the types of skills that are demanded in today's labour markets and the types of jobs that have the greatest potential for growth. Most of these jobs now require some familiarity with, if not mastery of, navigating through digital material where readers determine the structure of what they read rather than follow the pre-established order of text as presented in a book.

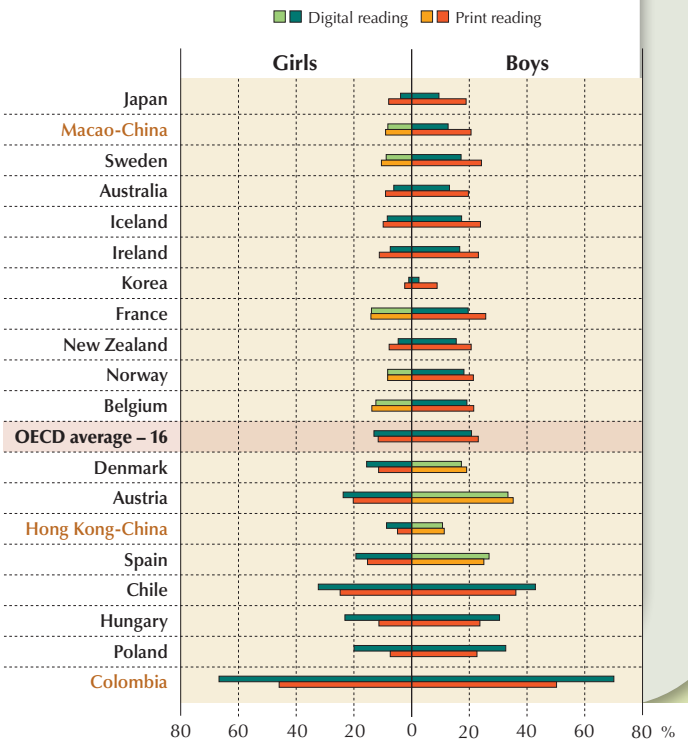
In general, students who read well on paper read well on screens, too.

PISA 2009 evaluated not only how proficient 15-year-olds are in gathering and processing information that they acquire when reading printed texts, but also how proficient they are in reading digital material. PISA found that some countries have been far more successful than others in helping students to equip themselves to participate fully in the digital age. For example, more than 17% of students in Australia, Korea and New Zealand are top performers in digital reading, while fewer than 3% of students in Austria, Chile and Poland achieve that level of performance. Korea recently developed a "Smart Education" policy that includes digitalising all textbooks and assessments by 2015, building or improving school infrastructure so that it accommodates new technologies, and training teachers in the use of these technologies.

Although, on average, student performance in digital reading is closely related to performance in print reading, in some countries, such as Australia and Korea, students score significantly higher in digital reading than in print reading, while in other countries, notably Hungary, Poland and the partner country Colombia, students are better in print reading than in digital reading.



Percentage of low-performing boys and girls in digital and print reading



Note: Percentage-point differences between the proportion of girls/boys who are low performers in digital reading and the proportion of girls/boys who are low performers in print reading that are not statistically significant are shown in a lighter colour.
Countries are ranked by increasing percentage-point difference between the proportion of boys who are low performers in digital reading and the proportion of boys who are low performers in print reading.
Source: OECD, *PISA 2009 Database.*
StatLink http://dx.doi.org/10.1787/888932436556

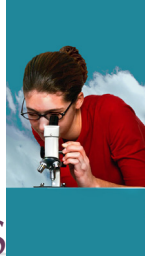
But the gender gap is narrower than in print reading…

The assessment revealed some interesting differences between the skills of girls and boys in the digital domain. While girls outperform boys in both print and digital reading, the gender gap tends to be narrower in digital reading. On average, among the 16 OECD countries that took part in both assessments, girls outperformed boys by 38 points – the equivalent of one year of formal schooling – in print reading, but by 24 points in digital reading.

This difference is seen most clearly at the extremes of the proficiency scale, that is, among poor performers and top performers. For example, in Chile, Hungary, Poland and the partner country Colombia, the percentage of girls who performed poorly in digital reading was greater than that of girls who performed poorly in print reading. However, in Australia, Iceland, Ireland, Japan, Korea and New Zealand, fewer girls performed poorly in digital reading than in print reading. The opposite was seen among boys. In Australia, Belgium, France, Iceland, Ireland, Japan, Korea, Sweden and the partner economy Macao-China, there were far fewer low-performing boys in digital reading than in print reading.

Poor performers in print reading are those who have not achieved a baseline proficiency in reading. They are capable of recognising a main idea in a text about a familiar topic and recognising the connection between such information and their daily lives.

Poor perfomers in digital reading can locate and interpret information that is well-defined and usually related to familiar contexts. They can navigate across a limited number of sites when given explicit directions.



Top performers in print reading can handle unfamiliar ideas in the context of competing information, and generate abstract categories for interpretation.

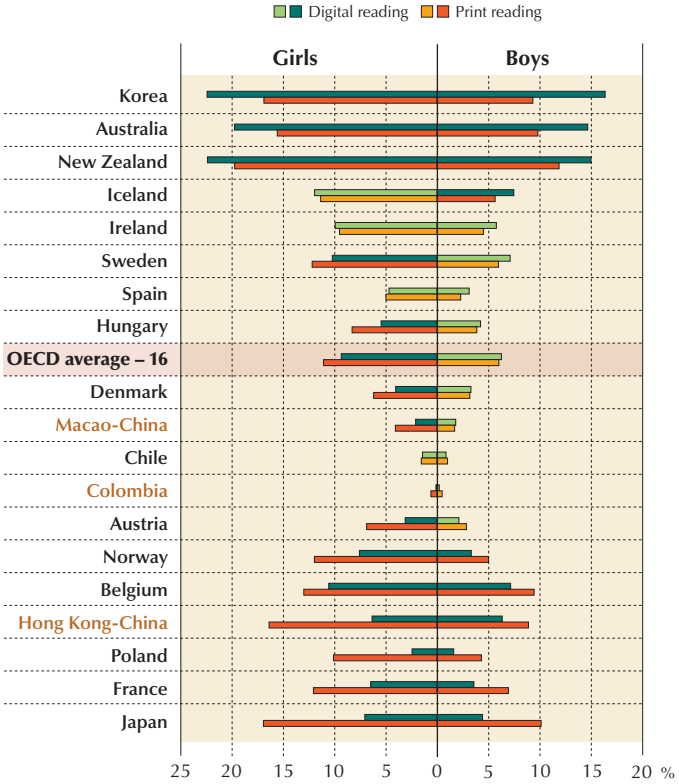
Top performers in digital reading can locate, analyse and critically evaluate information in an unfamiliar context and despite ambiguity. They can also navigate across multiple sites without explicit direction and handle texts in a variety of formats.

The smaller proportion of top-performing girls in digital, as compared with print, reading also contributed to the narrower gender gap in digital reading performance. The difference was particularly marked in Austria, France, Japan, Norway, Poland, and the partner economy Hong Kong-China. In contrast, in Australia, Korea and New Zealand, more girls were top performers in digital reading than in print reading.

...which could signal boys' greater ease in the digital medium.

Regardless of the country, the increase in the percentage of top performers in digital reading over print reading was always greater among boys than among girls, as was the reduction in the percentage of poor performers.

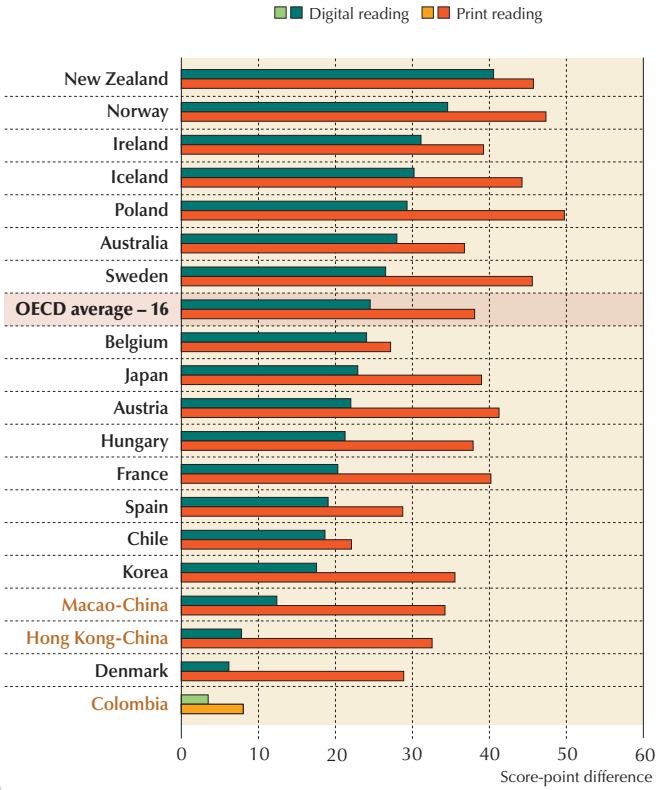
Percentage of top-performing boys and girls in digital and print reading



Note: Percentage-point differences between the proportion of girls/boys who are top performers in digital reading and the proportion of girls/boys who are top performers in print reading that are not statistically significant are shown in a lighter colour.
Countries are ranked by decreasing percentage-point difference between the proportion of boys who are top performers in digital reading and the proportion of boys who are top performers in print reading.
Source: OECD, *PISA 2009 Database.*
StatLink http://dx.doi.org/10.1787/888932436556



Comparison of gender gaps (in favour of girls) in digital and print reading



Note: Score-point differences between girls and boys in digital reading (gender gap in digital reading) and between girls and boys in print reading (gender gap in print reading) that are not statistically significant are shown in a lighter colour.
Countries are ranked according to the size of the gender gap in digital reading.
Source: OECD, *PISA 2009 Database.*
StatLink http://dx.doi.org/10.1787/888932436556

Interestingly, when comparing girls and boys who were similarly proficient in print reading, boys scored an average of six points higher in digital reading. Among these students, boys outperformed girls in digital reading by between 5 and 22 score points in Australia, Austria, Denmark, Hungary, Iceland, Korea, Poland, Spain, Sweden and the partner economies Hong Kong-China and Macao-China. Only in Belgium did girls outperform boys. What could account for this difference? One explanation is that boys and girls do not share the same degree of ease in selecting and organising – or navigating – pieces of information found in hypertexts.

The bottom line: Boys' interest and abilities in digital reading could be exploited to start a "virtuous cycle" through which more frequent reading of digital texts would result in better digital reading proficiency, which, in turn, would lead to greater enjoyment of reading and better proficiency in print reading, as well. Parents, educators and policy makers should also take note of girls' weaker skills in digital navigation. Without those skills, students will find it difficult to make their way in the digital age.

For more information

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See *PISA 2009 Results: Students On Line: Digital Technologies and Performance (Volume VI)*

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