



Students, Computers and Learning: Making the Connection

Country note Italy

- Computers do not have as much of a presence in Italian schools as they do on average across OECD countries. In 2012, there was only **one school computer available for every four 15-year-old students** in Italy (students-per-computer ratio: 4.1-to-1). Only **two out of three students (66.8%) reported using computers at school** – 3 percentage points more than in 2009. But mathematics teachers in Italy use computers more than do maths teachers in other countries. Some 40.4% of students in Italy reported using computers in mathematics lessons, compared to 31.6% of students, on average across OECD countries. In general, countries that have invested more heavily in ICT for education have seen no appreciable improvement in student achievement in reading, mathematics or science over the past ten years.
- The mean performance of Italian students in the PISA test of digital reading (504 points on the PISA digital reading scale) is close to the OECD average score. **Students in Italy tend to perform better in digital reading than students in other countries who have similar performance in print reading.** The performance of Italian students in digital reading may be due to their strong motivation for trying to solve online tasks. Compared with students in other countries, few Italian students do not even try to browse the web to find the information needed for solving assessment tasks. However, many more students than on average across OECD countries get lost in their navigation.
- **Students in Italy who reported using the Internet for schoolwork did not perform better in the PISA digital reading test than students who never do so.** This suggests that when students use the Internet for schoolwork, they do not learn how to plan and execute a search, how to evaluate the usefulness of information, or how to assess the credibility of sources. Students seem to receive little help from schools in developing these increasingly important skills.
- Regardless of socio-economic status, **students in Italy spend on average about 1.5 hours on line every weekend day – less than the OECD average.** Advantaged students (those among the top 25% in socio-economic status) are significantly more likely than disadvantaged students to use their leisure time on line to search the Internet for information, read online news, and read and write e-mails, rather than use the Internet mostly to play online games or to chat.

Key international findings

Over the past 10 years, there has been no appreciable improvement in student achievement in reading, mathematics or science, on average, in countries that have invested heavily in information and communication technologies for education. In 2012, in the vast majority of countries, students who used computers moderately at school had somewhat better learning outcomes than students who used computers rarely; but students who used computers very frequently at school did a lot worse, even after accounting for the students' socio-economic status.

The top-performing country in the PISA 2012 assessment of digital reading was Singapore, followed by Korea, Hong Kong-China, Japan, Canada and Shanghai-China. Students in Australia, Canada, Ireland, Korea, Singapore and the United States showed the most advanced web-browsing skills. More often than students elsewhere, they carefully selected links to follow before clicking on them, and followed relevant links for as long as was needed to answer the question. To use and understand online sources of information, students need such web-browsing skills in addition to the reading skills required for printed texts.

In most countries, differences between advantaged and disadvantaged students in access to computers and the Internet at home shrank between 2009 and 2012. In all but five OECD countries with available data, in 2012

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disadvantaged students – those from the bottom 25% in socio-economic status – typically spent at least as much time on line, outside of school, as advantaged students did. But traditional socio-economic differences persist when looking at how students use their time on line, and they continue to have a strong impact on performance in reading. Indeed in all countries, advantaged students are significantly more likely to use their time on line to read news or obtain practical information. To benefit from online information about education, health or financial services and improve one's personal situation, having sufficient basic skills in reading is perhaps more important than easy access to the Internet.

Students' exposure to computers at school varies significantly across countries and schools. While the availability of devices and of an Internet connection at school explains much of this variation, teachers' readiness to integrate technology into instruction also depends on other factors, such as whether the devices can be accessed in the classroom or only in separate rooms, whether the school has a digital skills curriculum, and whether teachers in the school have learned how to use these devices to enhance student learning. Among all teachers, those who are more inclined to use and better prepared for practices such as group work, individualised learning and project work are more likely to use digital resources.

To learn more...

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