



**i n F o c u s**

**Were schools equipped to teach – and were students ready to learn – remotely?**

Programme for International Student Assessment



## Were schools equipped to teach - and were students ready to learn - remotely?

- On average across OECD countries in 2018, about half of 15-year-olds were enrolled in schools whose school-leaders reported that an effective online learning support platform was available. One in three students were in schools where teachers did not have the necessary technical and pedagogical skills to integrate digital devices in instruction and effective resources to incorporate technology in digital or distance learning.
- There were socio-economic disparities in the availability of digital technologies in schools in many countries/economies. In Brazil, Mexico and Panama, for example, less than 20% of students in disadvantaged schools had access to an online learning support platform, while almost 60% or more students in advantaged schools in those countries did have such access.
- On average across OECD countries and in almost all countries/economies that participated in PISA 2018, students in disadvantaged schools had less access than students in advantaged schools to a quiet place to study, a computer for schoolwork and an Internet connection at home.

The COVID-19 crisis continues to impact education globally. According to [UNESCO](#), in mid-April 2020, 194 countries had closed schools nationwide, affecting almost 1.6 billion learners. By August 2020, there were still 105 country-wide closures affecting over a billion learners. In this situation, many educators have worked hard to sustain student learning and well-being. The form, intensity and success of those efforts vary across countries and economies, but digital technologies have emerged as a crucial prerequisite for success.

Digital technologies offer the potential to provide new opportunities and alternative approaches for learning. They can shape what people learn, how they learn, where they learn and when they learn and, especially, the type of interactions between teachers and students. However, the COVID-19 crisis arose at a time when most education systems were unprepared to make the most of the potential of digital technologies.

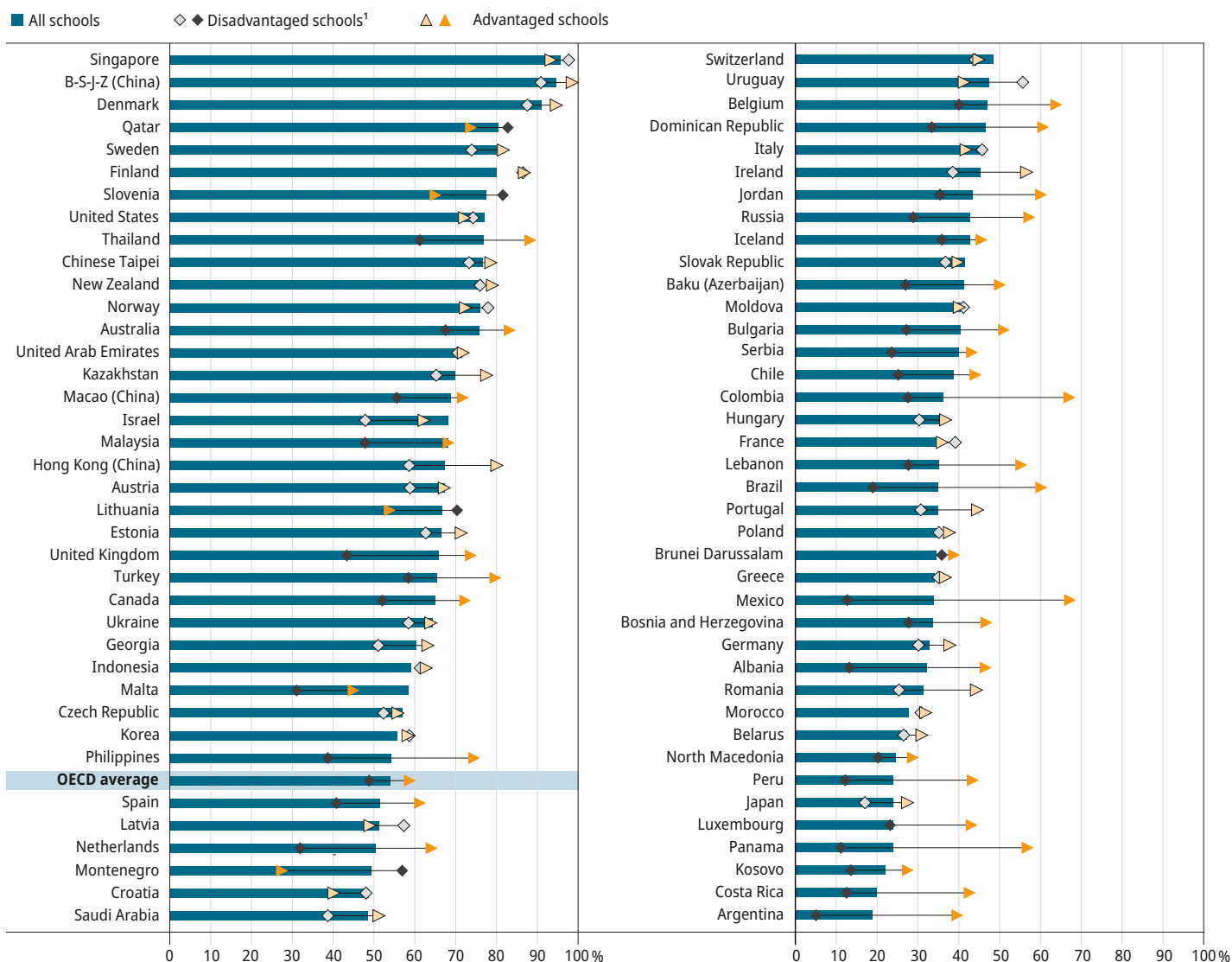
While digital technologies can support remote learning in many ways, their use is greatly facilitated by online learning support platform. However, on average across OECD countries, only about half of 15-year-olds were enrolled in schools in which school principals reported that an effective online learning support platform was available. Furthermore, large variation exists within and across

countries. For example, in Beijing, Shanghai, Jiangsu and Zhejiang (China), Denmark, Macao (China) and Singapore, over 90% of students were enrolled in schools that had an effective online learning support platform. But in Argentina, Belarus, Costa Rica, Japan, Kosovo, Luxembourg, Morocco, Panama, Peru and the Republic of North Macedonia, less than 30% of students had access to such a platform. In many countries/economies, students in socio-economically disadvantaged schools had less access to an online learning support platform than students in advantaged schools. The socio-economic disparity in access was especially stark in Brazil, Mexico and Panama, where the gap was over 40 percentage points.

The effectiveness of technology depends on how it is used. PISA 2018 surveyed school principals about different aspects of their school's capacity to enhance teaching and learning using digital devices. On average across OECD countries, only two out of three students were enrolled in schools whose principals considered that their teachers had the necessary technical ability and pedagogical skills to integrate digital devices effectively in instruction. This highlights the enormous amount of teacher professional development required in future as reliance on distance learning and technology grows and disparities between socio-economically advantaged and disadvantaged schools persist.

# An effective online learning support platform is available

Percentage of students in schools whose principal agreed or strongly agreed that an effective online learning support platform is available



**Notes:** Statistically significant values are shown in darker tones.

1. A socio-economically disadvantaged (advantaged) school is a school whose socio-economic profile (i.e. the average socio-economic status of the students in the school) is in the bottom (top) quarter of the PISA index of economic, social and cultural status amongst all schools in the relevant country/economy.

Countries and economies are ranked in descending order of the percentage of schools where an effective online learning support platform is available

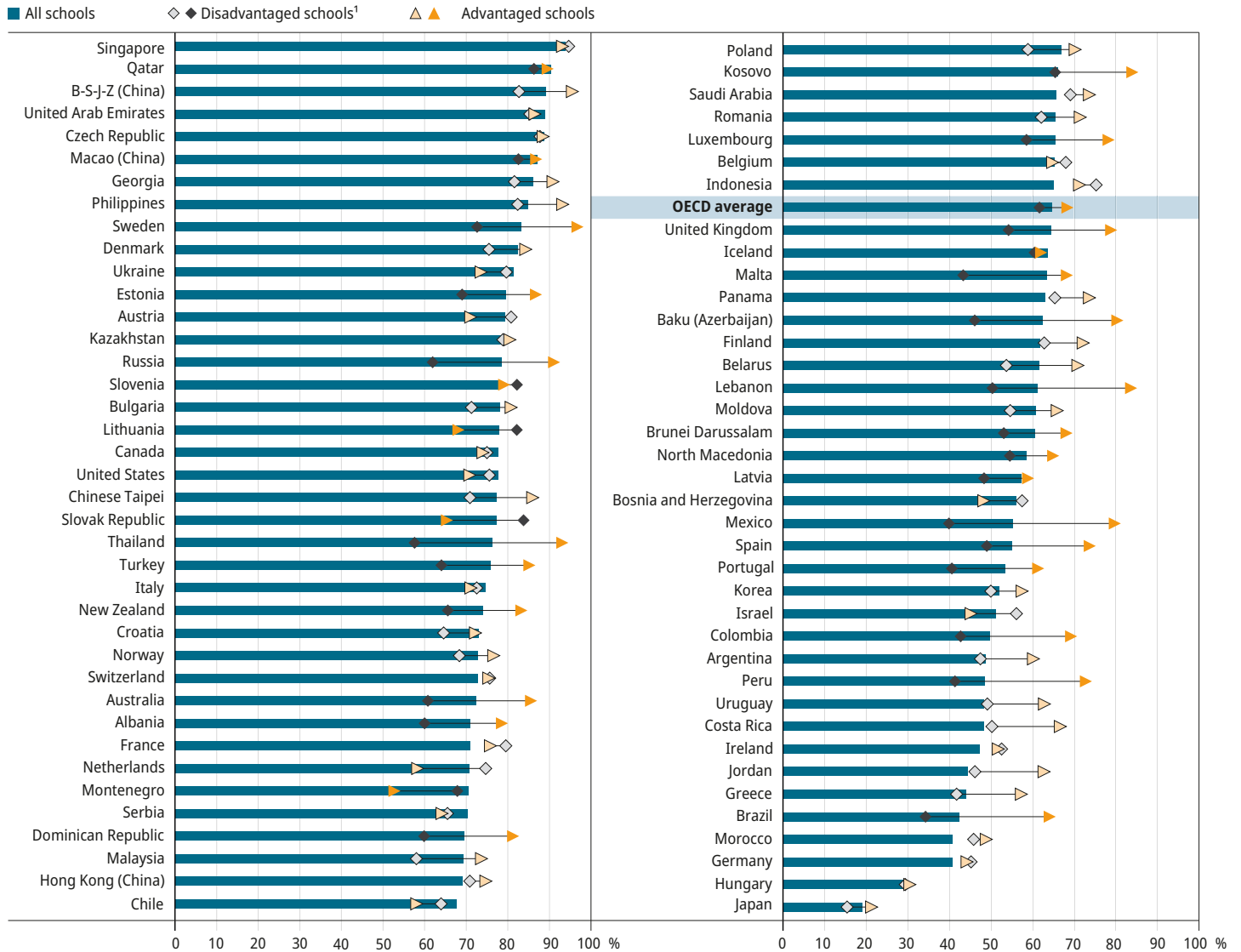
**Source:** OECD, PISA 2018 Database, Table V.B1.5.15 and Table V.B1.5.16

When teachers do not have the skills to effectively integrate digital devices into their instruction, they can learn how to use them – if appropriate resources are available. However, not all teachers have access to effective professional resources to improve their understanding of the technology and their knowledge of how to apply it. On average across OECD countries, only 65% of 15-year-olds were enrolled in schools whose principals considered that their teachers had the resources to broaden their

understanding of digital technology in and outside the classroom. At one extreme were Qatar and Singapore, where 90% of students were in schools that had such resources for teachers. At the other extreme were Hungary and Japan, with less than 30% of students in such schools. The socio-economic gap in access to these professional resources was particularly wide (over 30 percentage points) in Baku (Azerbaijan), Lebanon, Mexico, Peru and Thailand.

# Effective professional resources are available for teachers to learn how to use digital devices

Percentage of students in schools whose principal agreed or strongly agreed that an effective professional resources for teachers to learn how to use digital devices are available



**Notes:** Statistically significant values are shown in darker tones.

1. A socio-economically disadvantaged (advantaged) school is a school whose socio-economic profile (i.e. the average socio-economic status of the students in the school) is in the bottom (top) quarter of the PISA index of economic, social and cultural status amongst all schools in the relevant country/economy.

**Source:** OECD, PISA 2018 Database, Table V.B1.5.15 and Table V.B1.5.16

These results indicate that digital technology may exacerbate rather than mitigate the impact of disadvantage in individual home backgrounds. For some students, even the basics for learning are unavailable at home. Compared to advantaged students, socio-economically disadvantaged students tended not to have a quiet place to study at home

in the majority of countries and economies that participated in PISA 2018. On average across OECD countries, 9% of 15-year old students did not have a quiet study place, with the extremes in Indonesia, the Philippines and Thailand, where more than 30% of students so reported. Even in Korea, a top-performer in PISA, one in five students from the 25% most

disadvantaged schools reported that they did not have a place to study at home, while only one in ten students in advantaged schools so reported.

Online learning from home obviously requires access to a computer and an Internet connection. PISA 2018 results revealed considerable disparities across and within countries/economies in the availability of home computers for schoolwork. While over 95% of students in Austria, Denmark, Iceland, Lithuania, the Netherlands, Norway, Poland, Slovenia and Switzerland reported that they had a computer at home to use for their schoolwork, only 34% of students in Indonesia so reported. Here too, there were large differences between socio-economic groups. For example, virtually every 15-year-old in socio-economically advantaged schools in the United States had a computer at home for schoolwork. Only three out of four students in disadvantaged schools had one. In Peru, 88% of students in advantaged schools had a computer at home for schoolwork, but only 17% of students in disadvantaged schools had one. The situation is similar with home Internet connectivity. In some countries/economies, access to the Internet at home was nearly universal, while in others only 50% of

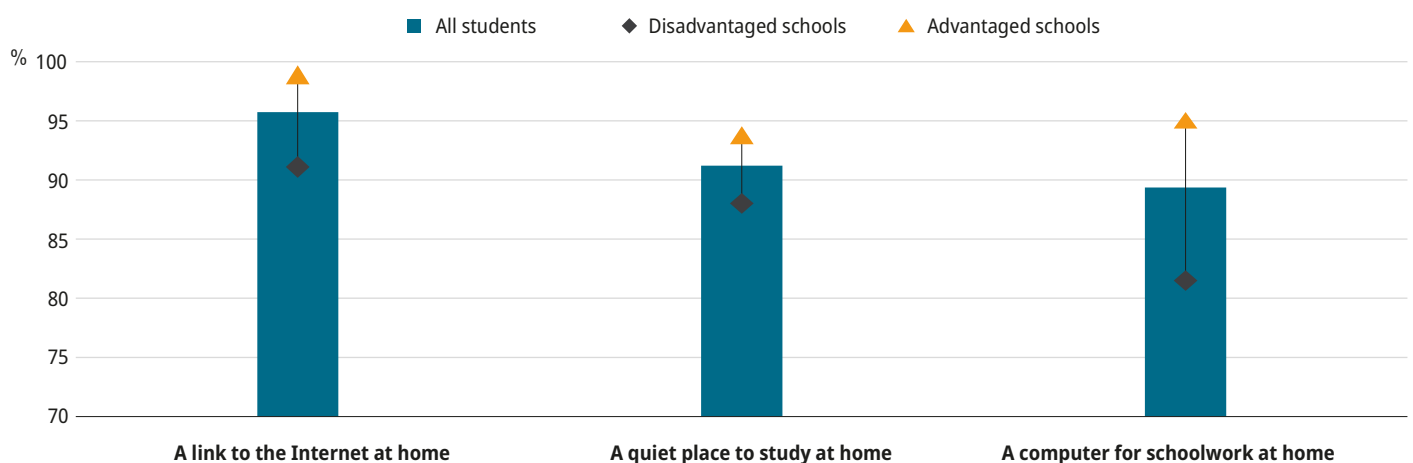
15-year-old students had Internet access at home. In Mexico, 94% of advantaged students had an Internet connection at home, compared to only 29% of disadvantaged students.

These results show that not all schools were ready to provide teaching remotely by using digital technologies. Students in disadvantaged schools faced more challenges than students in advantaged schools in both the home learning environment and the online teaching provided by schools. Since March 2020, schools and governments have implemented a range of measures to mitigate the loss in instructional time, including offering online schooling and providing digital devices to those who do not have such devices. If adequate support is provided to students who are most vulnerable, such measures could potentially narrow the socio-economic gaps in accessing digital technologies for learning.

PISA 2018 results provide benchmark information on the situation before the outbreak of COVID-19. PISA data can help education stakeholders to determine the breadth of additional support required and identify students and schools to target.

## Students' online learning environment at home

Percentage of students who reported to have the following at home; OECD average



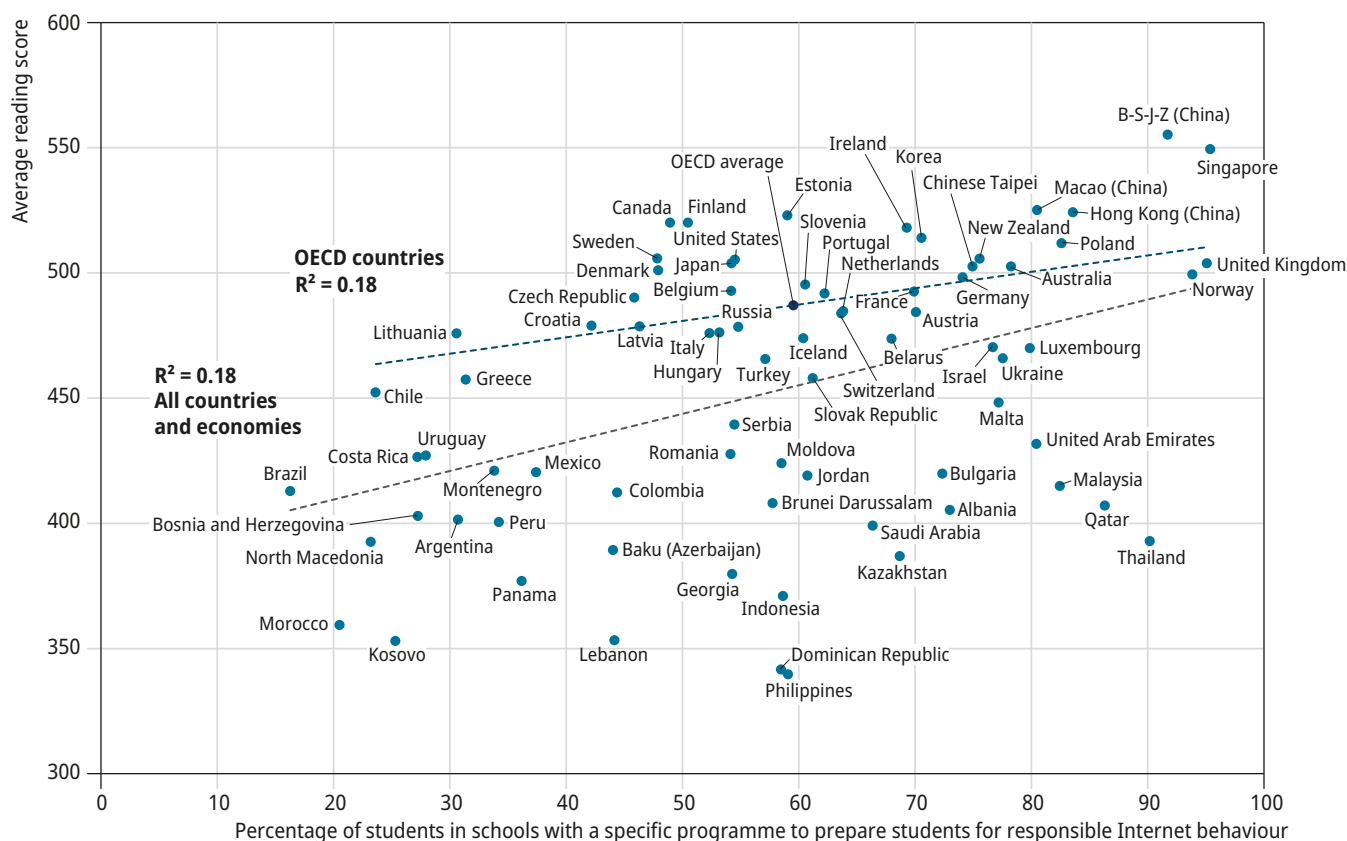
**Notes:** All differences between advantaged and disadvantaged schools are statistically significant, on average across OECD countries.

**Source:** OECD, PISA 2018 Database, Table V.B1.9.1, Table V.B1.9.2 and Table V.B1.9.3.

PISA 2018 results also show that high-performing systems and/or systems with greater equity in education share several characteristics in terms of digital resources. For example, in such systems, regardless of the socio-economic background of their students, a higher proportion of schools had an effective online learning support platform and computers with high-speed Internet connectivity and broad bandwidth. Successful systems also had schools that provided guidelines on the use of digital devices. In successful systems, regardless of

the socio-economic background of their students, a higher proportion of schools had specific programmes to prepare students for responsible Internet behaviour. These schools also tended to schedule time to allow teachers to improve their ability to use digital technologies.

## Reading performance and availability of a specific programme at school to prepare students for responsible Internet behaviour



Source: OECD, PISA 2018 Database, Table V.B1.4 and Table V.B1.5.18

## The bottom line

As COVID-19 affects the lives and education of so many around the world, governments and schools have to make tough decisions about how to effectively allocate their resources. PISA 2018 results can help by identifying: 1) the subgroups of students or schools that may be most affected by the crisis; 2) the digital resources and support which may be required to help teachers and students; and 3) the specific policies and practices related to digital technologies that have the strongest associations with performance and equity in education. With such information and data at hand, policy makers and educators can make strong evidence-based decisions and implement plans to best help students in their specific contexts and situations.

## For more information

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**See:** OECD (2020), PISA 2018 Results (Volume V): Effective Policies, Successful Schools, OECD Publishing, Paris, <https://doi.org/10.1787/ca768d40-en>

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