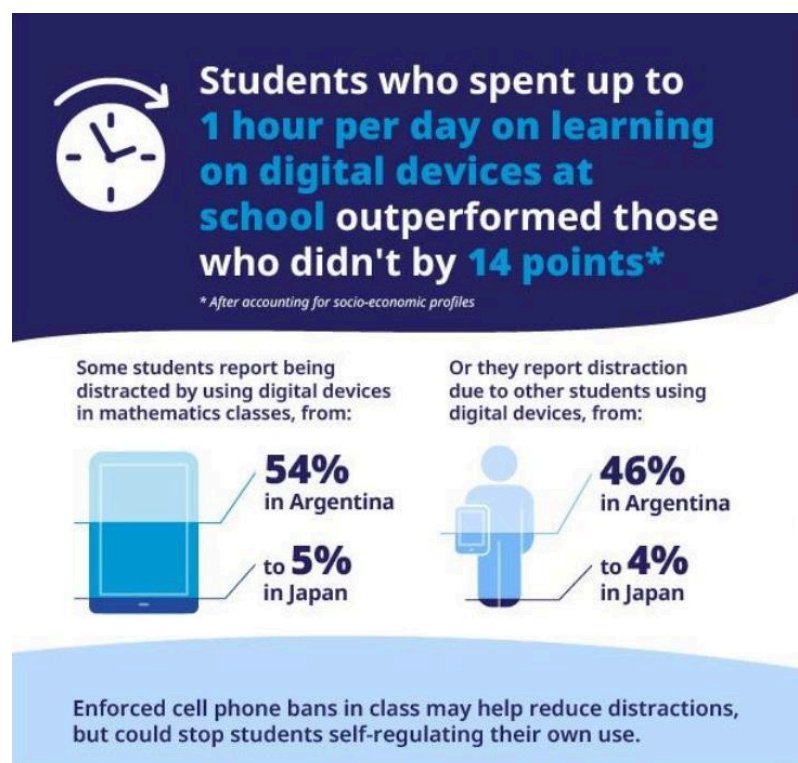


Digital Learning in Focus: Navigating the PISA 2022 Insights

The impact of digital technologies and importance of high quality education materials

[The PISA results are in.](#) In response, some media sources have sensationally focussed on stark downward trends in base skills, and others on the idea of screen time directly influencing mathematic achievement without also looking at the benefits of device use listed in the study, and a great number rightly understand that the challenging background of emergency remote teaching and learning played a consequential role in these results. We've collated some of the key points related to digital education from the PISA report and the launch event that we think are important to look at and also keep in mind as we consider a more balanced discussion of the results.

Moderate use of digital devices in school is related to higher performance

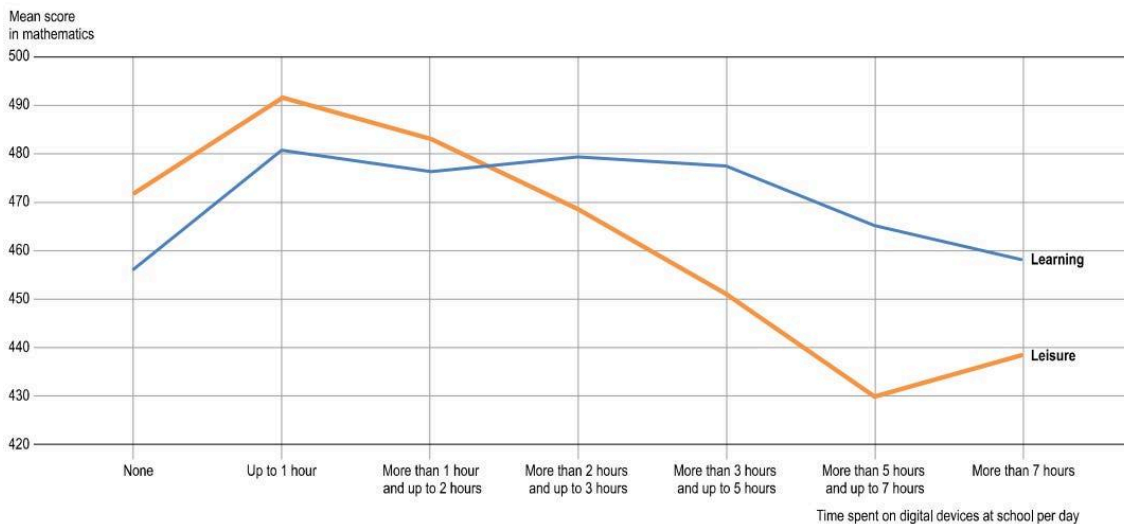


Importantly, the results indicate that **moderate use of digital devices in school is related to higher performance**. In fact, **moderate use (up to one hour a day on digital devices for learning activities)** led to an increase of scores in mathematics by 14 points.

Comparatively, mean performance in this year's results failed by 10 score points in reading and 15 score points in math, which is equivalent to half and three quarters of a year respectively of learning.

Figure II.5.14. Time spent on digital devices at school and mathematics performance

Based on students' reports; OECD average



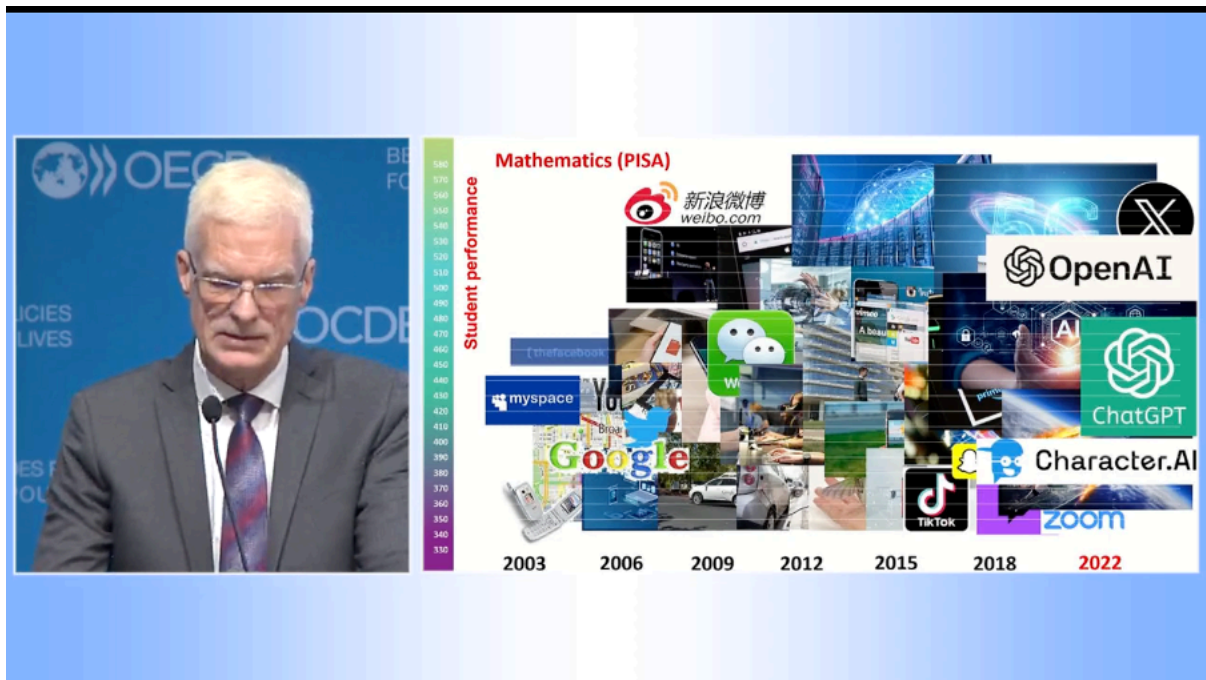
Note: Differences between categories are all statistically significant (see Annex A3). Source: OECD, PISA 2022 Database, Annex B1, Chapter 5.

A nuanced differentiation between types of technologies and the impact of their use in learning

However, the relationship with devices differs greatly according to the purpose of use. Whilst this makes sense, it is something that needs to be further explored so that we can better understand successful pedagogical practices related to device use and the relationship with relevant resources and tools.

The differentiation made in the study is between the use for learning activities and “leisure use”. This also echoes our call out to the ecosystem for a more nuanced understanding of the difference between screen time with dedicated learning applications designed for educational purposes (EdTech), and technology used within Education (e.g. conference tech like Zoom, or social media applications).

The need for such a more balanced understanding of the different types of technology became apparent during the press conference, when the following slide was shared with the audience:



Source: OECD PISA launch Webinar

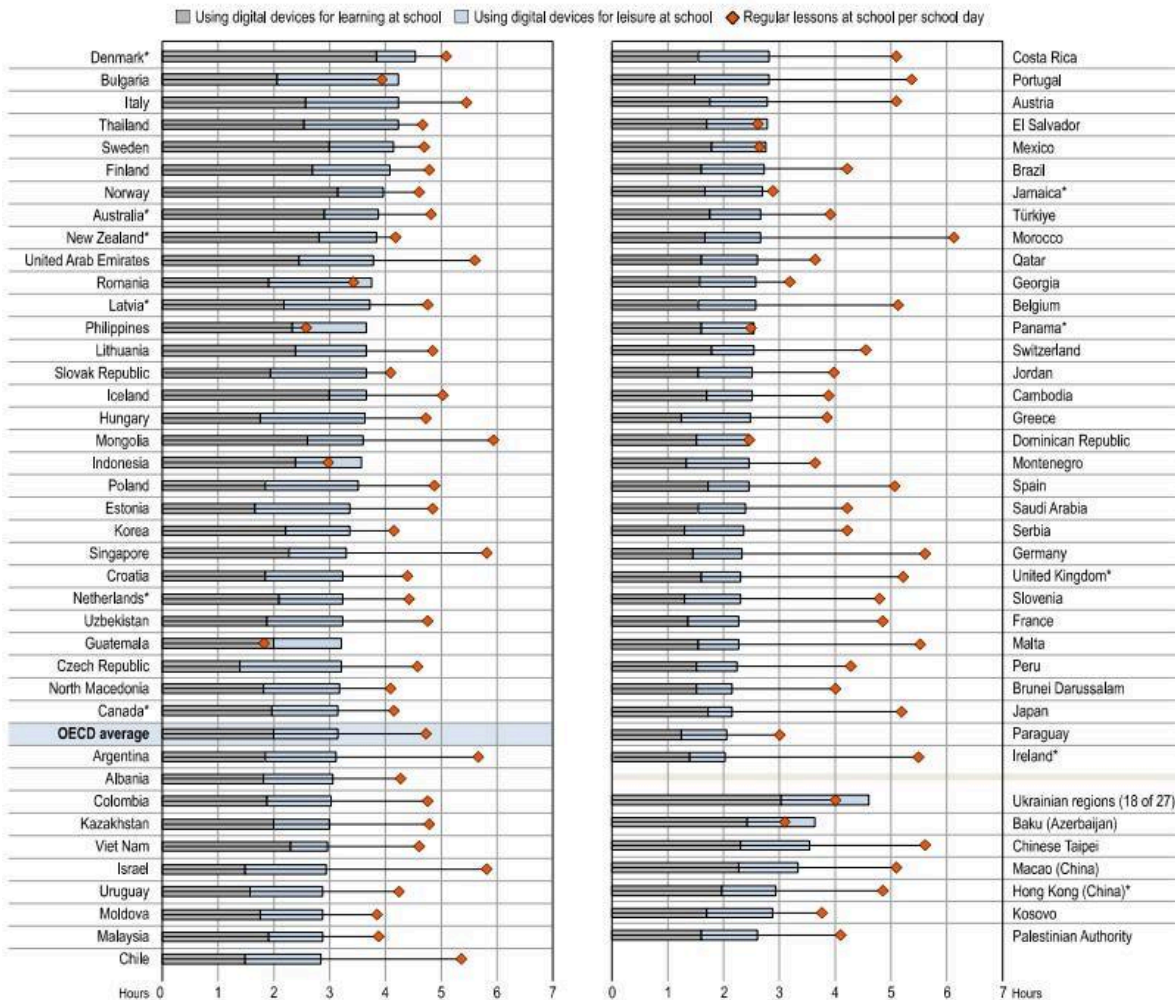
It's unclear how the majority of any of these technologies have any relation to mathematics.

Additionally, it is important to note that the time on devices results are primarily related to use in mathematics lessons. It will be necessary to explore what this could mean for different subjects with varying requirements and associated pedagogies.

When referring to “leisure use” of technology, the OECD report only gives the example of mobile phones, and that the use of these “seems to be associated with poorer results”. **The poorer results seem to be mainly due to students either being distracted themselves or by others using these technologies. A complete ban of smartphones from the classroom might not always be the right move, though.** First, in some countries smartphones are the only available devices for digital learning. Second, not all applications of smartphones are actually detrimental, because what matters is the resources used and how they are implemented. And third, the report shows that there is an enforcement issue with 30% of students across OECD countries where the use of cell phones is banned “still using a smartphone several times a day, and 21% using one every day or almost every day at school.”

Figure II.5.15. Time spent at school in regular lessons and on digital devices

Time spent per day by students (in hours)



Notes: Only countries and economies with available data are shown.

Time spent in regular lessons at school per school day refers to the time spent in regular lessons per school week divided by five (with the assumption there are five days per school week).

Countries and economies are ranked in descending order of the time spent using digital devices at school for both learning and leisure.

Source: OECD, PISA 2022 Database, Annex B1, Chapter 5.

Education systems need to provide adequate and high-quality educational material and digital devices

The report continues by stating: **Education systems need to provide adequate and high-quality educational material and digital devices**, and develop guidelines for their use. The OECD goes further by stating

“it is important to ensure that all schools, regardless of their socio-economic profile, enjoy adequate and quality educational material and digital resources”.

And that, as a remedy to some of the potential downsides of device use, policies that target students' skills and behaviours when using digital devices are critical for limiting distractions.

In the answer to a question from the audience, Andreas Schleicher named Singapore as one of the best-practice examples that other countries could learn from. Notably, within the report, there is a focus on the success factors of the Singaporean environment, which also mention educational technology platforms and resources, a national online learning platform, and personal learning devices that have been rolled out for all secondary school students under the National Digital Literacy Programme.

The importance of personalised learning tempered with a need for real-world learning experiences and competencies

In the subsequent launch panel, Ministers from Korea, Japan and Estonia - all three countries touted as global leaders in the PISA results this year - provided some interesting insights into their successes.

While their successes cannot exclusively be attributed to the use of digital technologies, all of them stressed the importance of personalised learning including through technology/AI. Japan has been using ICT to battle overload among teachers by cutting work hours. They also have provided every child with their own device, making it possible to learn and teach. The Estonian Education Minister defines personalised learning as taking students' personal capacities to the maximum and believes that technologies like AI could help achieve better classroom management across larger class sizes. Korea is planning to introduce their first AI-based textbook in 2025.

All three, however, underscored the importance that **any digital personalised learning always has to be combined with real-world learning settings, even suggesting that the real world can be more important than the virtual world for learning experiences.** Human-to-human interaction is a vital component of education and that teachers will play a crucial role in developing their students' cognitive skills. The Korean Minister highlighted that even though AI and newer technologies will play a great role in teaching and learning, knowledge is only part of learning. He pointed out the need of students becoming more social and added that this can be achieved through many different methods (i.e. extra-curricular activities and P.E.).

Another aspect that was emphasised by the panel was the need to equip all teachers with digital competences. Estonia has been focusing on this for the past five years by teaching its educators not only how to use modern technology tools, but also how to teach through tech. The PISA results also showed how important it was to prepare students for autonomous learning. Students were more confident about using digital technologies for remote learning than they were about taking responsibility for their own learning, with both skill sets being essential and directly impacting achievement.

Balancing benefits with the need to explore their meaning for wider education practice

The PISA 2022 report reveals that moderate use of digital devices in schools correlates with higher academic performance, emphasizing the importance of how and why these devices are used. Distractions from digital devices present a significant challenge, with about one-third of students reporting such distractions, which negatively impact their academic performance. The effectiveness of school policies to control these distractions depends on their design and enforcement. A notable disparity exists in the availability of quality educational materials and digital devices between socio-economically advantaged and disadvantaged schools, highlighting the need for equitable access to these resources. Students generally feel confident using digital technology for remote learning but are less sure about managing their own learning, suggesting a need for enhanced self-directed learning programs. Teachers play a vital role in fostering students' confidence in self-directed learning, especially in digitally enabled environments. Lastly, the global shift to remote learning during the pandemic underscores the ongoing challenge of integrating technology in education while maintaining a balance with traditional learning methods.

It remains important to lead a balanced and nuanced discussion about the types of devices and resources supporting education, but it is very clear that technology together with the right devices and pedagogies can enhance education environments.

Further Reading:

- [PISA 2022 Insights and Interpretations](#)
- [PISA results Volume 1: The state of learning and equity in education](#)
- [PISA results Volume 2: Learning during - and from - disruption](#)