Teaching in Focus #43

What makes students' access to digital learning more equitable?

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What makes students' access to digital learning more equitable?

- Teachers with high digital self-efficacy tend to work in private schools in almost a quarter of TALIS countries and territories and in socio-economically advantaged schools in one-seventh.
- Schools with adequate digital technology are more likely to have teachers with high digital self-efficacy in one-third of TALIS countries and territories.
- In a few TALIS countries and territories, teachers with pre-service ICT training tend to work in disadvantaged schools, while those with in-service ICT professional development tend to work in advantaged schools.

Information and communication technology (ICT) has become an important tool for school systems as they seek to enhance education and make it more efficient. This has become all the more apparent and urgent with the COVID-19 pandemic. But what degree of access do students from different socio-economic backgrounds have to ICT-based quality instruction? Overall, disadvantaged students tend to have less access to digital learning opportunities both at home and at school. The data also suggest that the way teachers with certain characteristics are distributed can facilitate better equity. Two examples highlighted below are teachers' digital self-efficacy and training in ICT-based instruction.

What is TALIS?

The Teaching and Learning International Survey (TALIS), established in 2008, is the first major international survey of teachers and school leaders on different aspects affecting student learning. It gives voice to teachers and school leaders, allowing them to provide input into educational policy analysis and development in key areas.

The international target population for TALIS 2018 is lower secondary teachers and their school leaders in mainstream public and private schools. For the 2018 survey, a representative sample of 4 000 teachers and their school principals from 200 schools were randomly selected in each country/territory. Across all survey components, approximatively 260 000 teachers responded to the survey, representing more than 8 million teachers in 48 participating countries and territories.

TALIS participants had the opportunity to opt for a survey implementation in upper secondary schools. Fifteen countries and territories decided to engage in a TALIS survey for primary education, from which data is available for 12, and 11 countries and territories decided to engage in a TALIS survey for upper secondary education, from which data is available for 10.

Data collection took place between September and December 2017 for Southern Hemisphere participants and March to May 2018 for Northern Hemisphere participants. Since the data were collected before the COVID-19 crisis, please note that some of the frequencies and relationships among the variables reported here may have changed. More information is available at www.oecd.org/education/talis.

TALIS collects reliable and comparable data from participating countries and territories. Following OECD data regulations, a visual separation between countries and territories has been used in all charts to reduce the risk of data misinterpretation.

Distributing teachers with high digital self-efficacy to increase digital learning

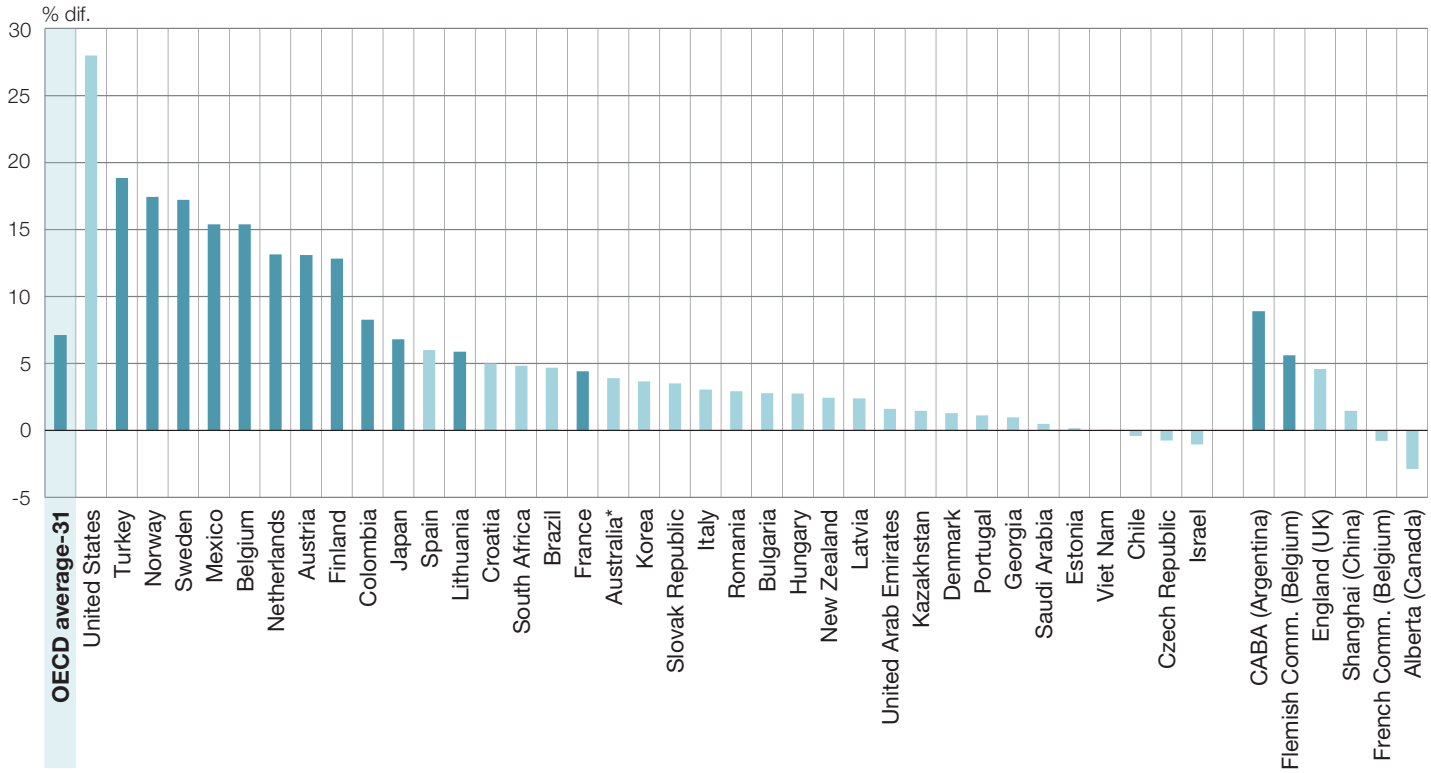
Self-efficacy is an individual's perception of their own capability to perform a specific task. Such perception influences their actual behaviour and, thus, performance. There is a consensus among educational researchers, policy makers and practitioners that teachers' self-efficacy is strongly associated with their pedagogical practices and quality of instruction.

When looking at ICT-based teaching, high self-efficacy is associated with teachers' actual use of digital technology in the classroom. Likewise, it has been suggested that an even distribution of teachers with high ICT self-efficacy among schools provides socio-economically disadvantaged students with the same opportunity to learn digital literacy skills as advantaged students. Teachers with high digital self-efficacy tend to work in private schools in almost a quarter of TALIS countries and territories, as well as in socio-economically advantaged schools in roughly one-seventh.

Interestingly, these teachers also tend to work in schools where the quality of instruction is supported by adequate digital technology, which is the case in about one-third of participating countries (Figure 1). The clearest examples are Turkey, Norway and Sweden, where the percentages of teachers with high digital self-efficacy are 19, 17 and 17 percentage points higher, respectively, in schools with adequate digital technology than those without.

Figure 1. Teachers' digital self-efficacy by school digital resources

Difference in the percentage of teachers who feel they can support student learning through the use of digital technology "quite a bit" or "a lot" between schools with adequate digital technology and schools with a shortage or inadequacy of digital technology



* For this country, estimates for sub-groups and estimated differences between sub-groups need to be interpreted with great care.

Note: Statistically significant differences are marked in a darker tone.

Countries and territories are ranked in descending order of the percentage-point difference in the share of teachers who feel they can support student learning through the use of digital technology.

Source: OECD, TALIS 2018 Database.

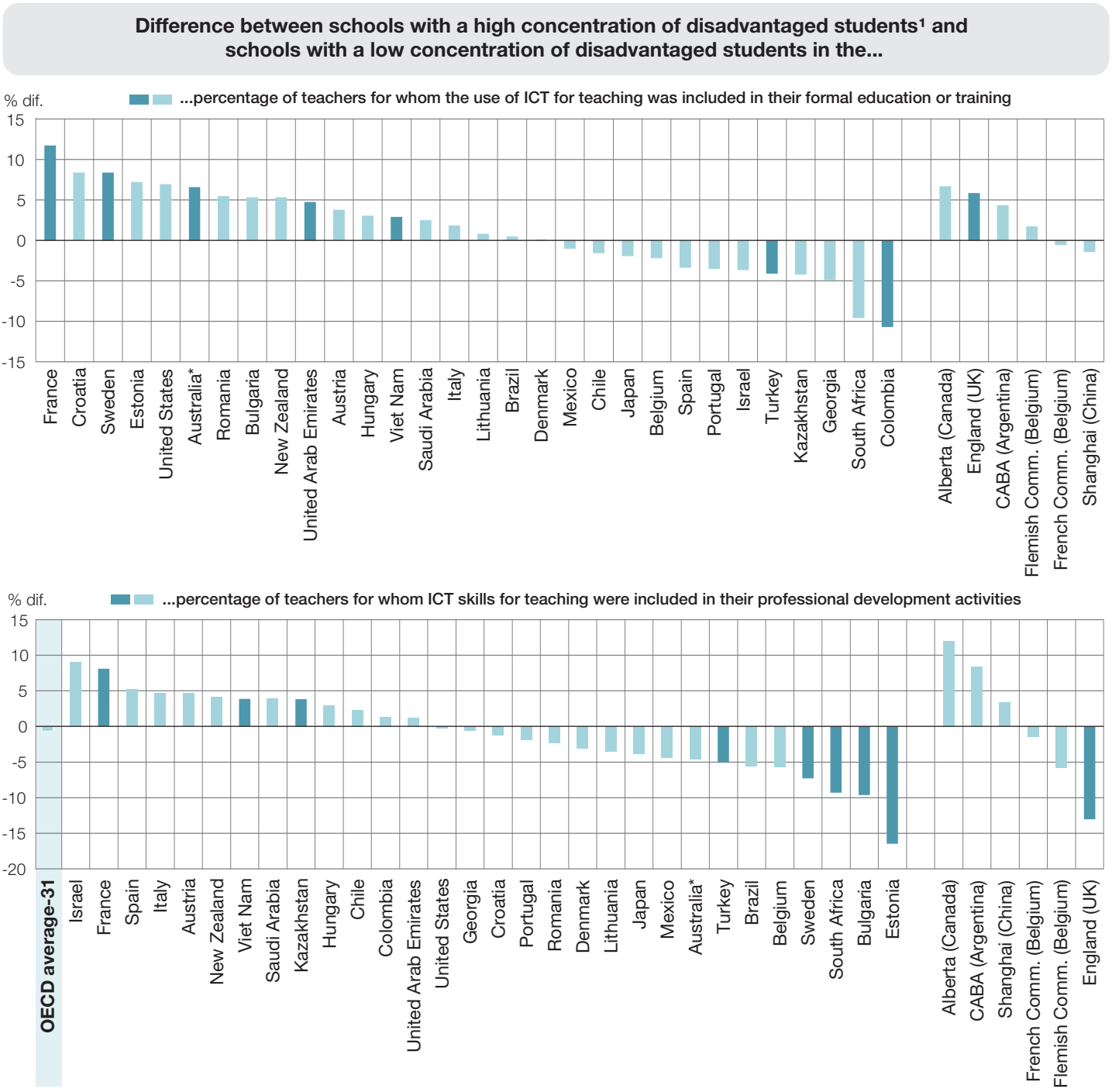
Evidently, teachers need the proper digital technology and tools to carry out their work effectively. Access to good digital technology may help teachers feel confident about using it and increase their self-efficacy. Nevertheless, TALIS data show important gaps in the allocation of ICT resources. It is more common for socio-economically disadvantaged, public and rural schools to report that they have inadequate digital technology. In particular, disadvantaged schools tend to have inadequate digital technology for teaching in one-quarter of TALIS countries and territories for which data are available. Likewise, public schools in one-third of participating countries and territories are more likely to have inadequate digital technology.

Balancing pre- and in-service training in ICT instruction

If we expect teachers to effectively make use of the digital resources they have, they need to be properly trained in how to use ICT in the classroom, both pre-service and in-service. Furthermore, it is crucial that trained teachers are distributed equitably so that all students have access to quality ICT-based instruction.

Teachers who report that they had initial training in ICT tend to work in rural, public and socio-economically disadvantaged schools, while teachers with professional development in ICT tend to teach in private and socio-economically advantaged schools (Figure 2). Although the composition of countries differs, about one-seventh of TALIS countries display these patterns.

Figure 2. Teachers' ICT skills by school socio-economic composition



* For this country, estimates for sub-groups and estimated differences between sub-groups need to be interpreted with great care.

Notes: ICT refers to information and communication technology.

Statistically significant differences are marked in a darker tone.

1. High concentration of disadvantaged students refers to schools with more than 30% of students from socio-economically disadvantaged homes. Low concentration of disadvantaged students refers to schools with less than or equal to 10% of students from socio-economically disadvantaged homes.

Countries and territories are ranked in descending order of the percentage-point difference in the share of teachers formally trained in ICT (top) and in the share of teachers who participated in ICT professional development activities (bottom).

Source: OECD, TALIS 2018 Database.

Notably, in a couple of countries/territories, teachers with initial training are concentrated in disadvantaged schools while those with professional development are concentrated in advantaged schools. For example, the difference between disadvantaged and advantaged schools is 8 percentage points in Sweden and 6 percentage points in England (United Kingdom) for initial training while it is -7 percentage points in Sweden and -13 percentage points in England (United Kingdom) for professional development. The large share of teachers with ICT-related initial training might reflect the younger age of teachers who work in those schools as ICT has increasingly become a focus area in recent years. At the same time, the larger share of teachers undergoing professional development in advantaged schools suggests a balancing mechanism whereby professional development is used to fix knowledge gaps from initial training.

The bottom line

Although access to adequate digital technology is not necessarily the most important factor in effective digital learning, data from several countries show that it is associated with teacher characteristics that improve student performance, in this case, digital self-efficacy. As such, more detailed research is needed to ascertain how access to adequate digital technology can be utilised effectively to achieve more even distributions of teachers with digital self-efficacy.

Furthermore, teachers need to have basic digital skills in order to integrate ICT effectively into their teaching. While it might be difficult to achieve an even distribution of teachers who have undergone such initial training through hiring practices, competency gaps can be addressed with professional training later on at schools and elsewhere where teachers without digital training are more likely to work. This would help even out competency gaps. If policy makers are aware of the distribution patterns of teachers who lack digital training, they will be better able to provide remedial measures where needed.

Visit

www.oecd.org/education/talis/

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Note

1. The author would like to acknowledge the contributions made to the preparation of this *Teaching in Focus* brief by OECD analysts Pablo Fraser and Gabor Fülöp and OECD statistician Hélène Guillou, as well as project assistant Emily Groves.

For more information

OECD (2022), *Mending the Education Divide: Getting Strong Teachers to the Schools That Need Them Most*, OECD Publishing, Paris, https://doi.org/10.1787/92b75874-en.

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