



SCHOOL EDUCATION DURING COVID-19 WERE TEACHERS AND STUDENTS READY?

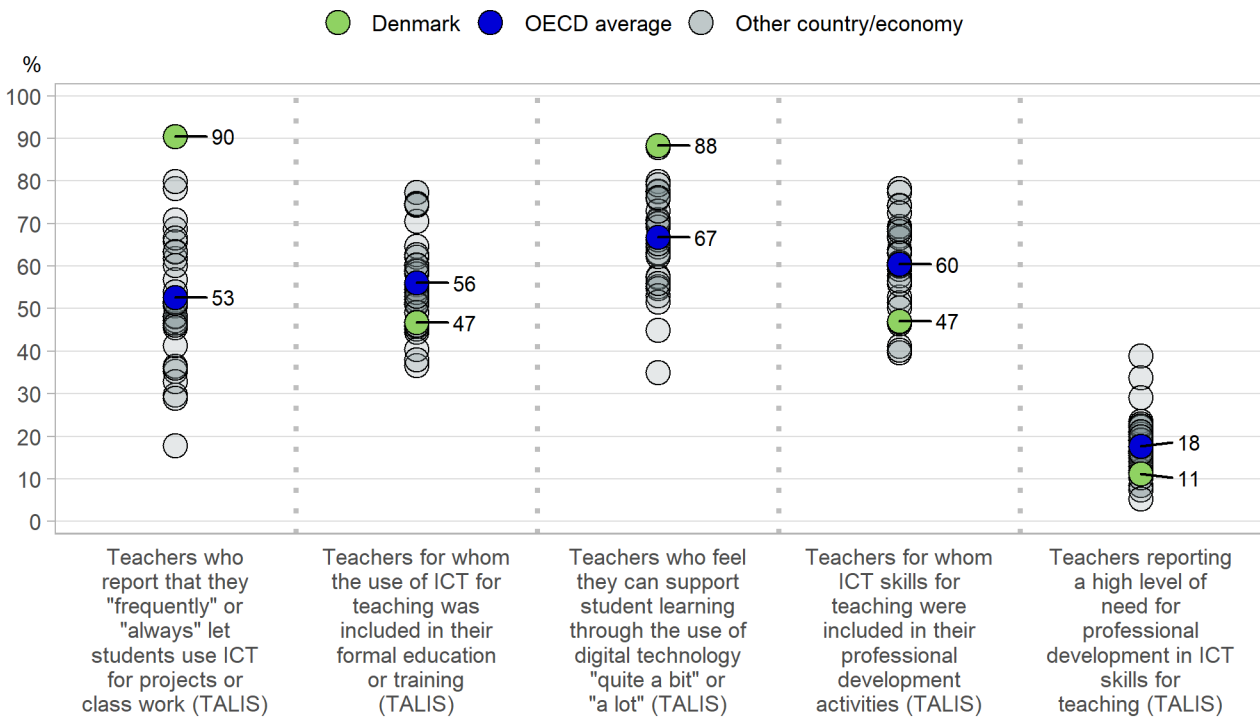
Denmark

As the COVID-19 pandemic worsened in countries across the globe, most governments took the precaution of closing their schools in an attempt to contain the spread of the virus. In Denmark, excluding the non-compulsory part of the curriculum, each week of school closures represents about 30 hours of face-to-face compulsory instruction time at school (lower secondary school – general orientation), that is to say 2.5% of annual compulsory instruction time. Schools were forced to replace this time in class with online learning and home schooling, in most cases facilitated by teachers and parents.

After weeks of school closures, some countries are now starting the complicated process of gradually reopening their schools. To support these efforts, this COVID-19 country note aims to bring together evidence from various OECD school education surveys conducted prior to the crisis and use it to examine how prepared teachers, students and schools were in Denmark to face the impact of the COVID-19 pandemic, with a view to informing and guiding future policy responses to the crisis.

Teachers', students' and school's familiarity with the use of ICT for teaching and learning prior to the crisis

Figure 1. Teachers' preparedness for ICT-based teaching prior to the crisis



Note: Only countries and economies with available data are shown. The OECD average refers to the average of OECD countries participating in TALIS 2018.

Source: OECD, TALIS 2018 Database.



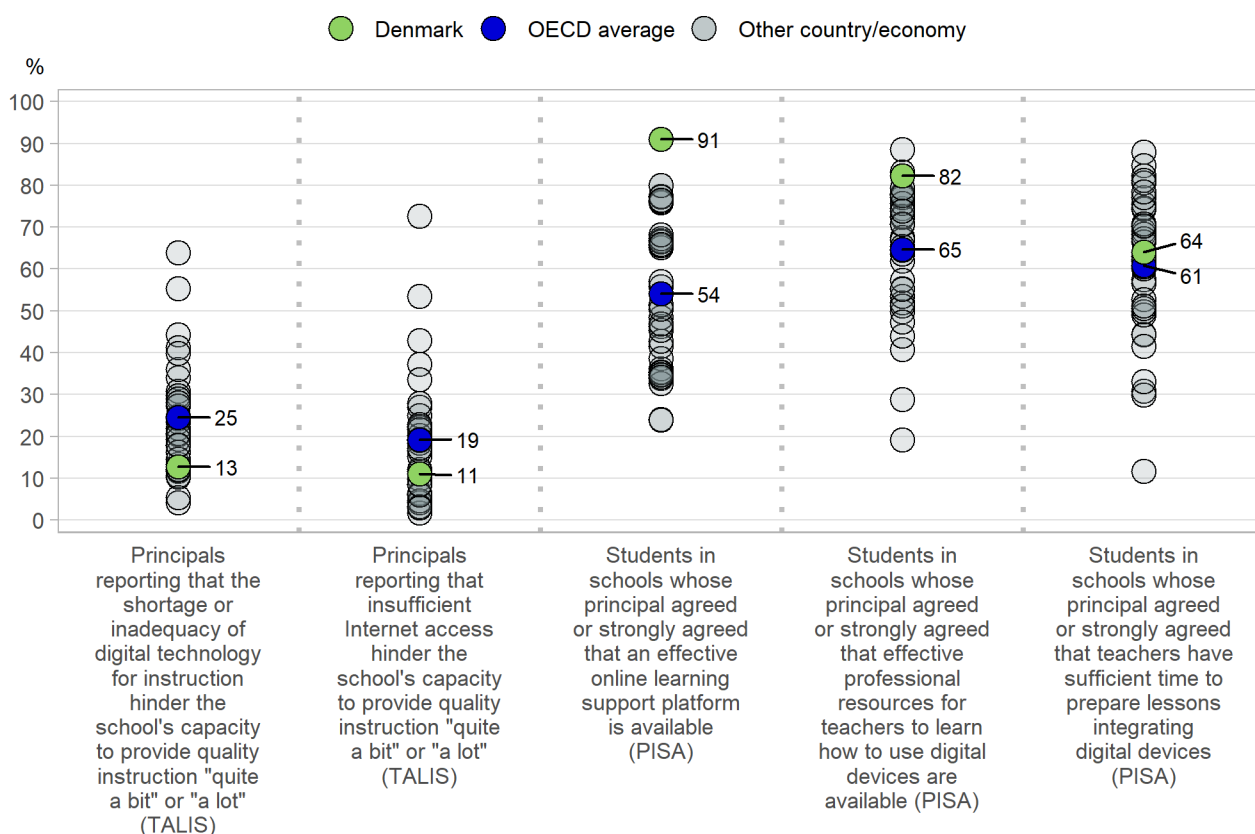
2 | Denmark - Country Note

The availability of information and communication technologies (ICT) makes it possible to continue instruction and learning when physical interactions are no longer possible. However, both teachers and students need to be very familiar with these technologies and their use in order for them to be effective.

A good starting point to assess the extent to which teachers and their students were prepared for school closures is to examine how frequently these technologies were used in the classroom before the crisis hit. Results from the 2018 Teaching and Learning International Survey (TALIS) prior to the crisis show that on average across participating OECD countries and economies, only slightly more than half of lower-secondary teachers (53%) reported letting students use ICT for projects or class work "frequently" or "always". In Denmark, this was the case for 90% of teachers, which is higher than the average of the OECD countries participating in TALIS.

In order to be effective, teachers' practices need to be grounded in a body of knowledge acquired through quality training. In Denmark, 47% of teachers reported that use of ICT for teaching was included in their formal education or training, which is lower than the average of the OECD countries taking part in TALIS (56%). At the time of the survey, 88% of teachers in Denmark felt that they could support student learning through the use of digital technology (e.g. computers, tablets, smart boards) "quite a bit" or "a lot", which is higher than the average of the OECD countries participating in TALIS (67%).

Figure 2. School and student preparedness for ICT-based learning prior to the crisis



Note: Only countries and economies with available data are shown. The OECD average refers to the average of OECD countries participating in TALIS 2018 and/or PISA 2018.

Source: OECD, TALIS 2018 Database and PISA 2018 Database.



Pre-service training in ICT for teaching may not be enough to ensure effective digital learning. Indeed, as learning technologies are characterised by a rapid pace of change, it is imperative for teachers to get access to in-service training to continually update their skills in this area. In Denmark, 47% of teachers reported that ICT skills for teaching were included in their professional development activities, which is lower than the average of the OECD countries in TALIS (60%). At the same time, in Denmark 11% of teachers reported a high level of need for professional development in ICT skills for teaching, which is lower than the average of OECD TALIS countries (18%). These pre-crisis reports therefore suggest that the transition to remote teaching and learning may have been challenging for a number of teachers.

The implementation of ICT in school also requires the availability of adequate resources for its access and use. Principals' views on which school resource issues are hindering the capacity to deliver quality instruction can shed light on possible impediments to the wider use of ICT for teaching in OECD schools. In Denmark, 13% of principals reported that the shortage or inadequacy of digital technology for instruction hindered the school's capacity to provide quality instruction "quite a bit" or "a lot", which is lower than the average of the OECD countries participating in TALIS (25%). Also, insufficient Internet access was reported as an issue by 11% of principals, which is lower than the average of the OECD countries participating in TALIS (19%).

Data from the 2018 cycle of the Programme for International Student Assessment (PISA) provide further insights into schools' capacity to enhance teaching and learning using digital devices. Some of these aspects refer to the availability or quality of ICT infrastructure, while others refer to teachers' and the schools' capacity to integrate digital devices into instruction. In Denmark, 91% of students were enrolled in a school whose principal "agreed" or "strongly agreed" that an effective online learning support platform is available, which is higher than the average across OECD countries (54%). At the same time, 82% of students in Denmark attended a school whose principal "agreed" or "strongly agreed" that effective professional resources designed to help teachers learn how to use digital devices were available, which is higher than the average across OECD countries (65%). PISA 2018 also asked principals about the time teachers are given to prepare lessons. In this regard, in Denmark, 64% of students attended a school whose principal "agreed" or "strongly agreed" that teachers have sufficient time to prepare lessons that integrate digital devices into learning, which is statistically not significantly different from the average across OECD countries (61%).

Teachers' and schools' readiness and capacity to overhaul their ways of working prior to the crisis

The capacity of schools to innovate, adapt and support staff varies from country to country and school to school. Yet it is these school capacities that can prove to be valuable assets for responding to crises and uncertain times, as well as building resilience when facing challenges in delivering instruction.

School closures have forced many schools to "think outside the box" and come up with innovative and pragmatic solutions in order to deliver teaching and ensure learning can happen remotely. The good news from the TALIS data collected in the 2018 cycle is that in spite of the challenges that the transition to remote teaching may have entailed for some teachers, a climate of openness to innovation was present in most OECD schools. In Denmark, 78% of teachers "agreed" or "strongly agreed" that most teachers in the school are open to change, which is higher than the average of the OECD countries participating in TALIS (74%).

The level of adaptation when faced with sudden change ultimately relies on the support of peers, enabling teachers as a professional collective to adjust to the new reality of remote teaching and to learn from each other. TALIS 2018 sheds light on the collaborative culture prevailing in OECD schools prior to the COVID-19 crisis, as well as the leadership of principals, who can play a key role in fostering collegiality and collaboration among teachers. In Denmark, 13% of teachers reported participating in collaborative professional learning in their school at least once a month, which is lower than the average of the OECD countries participating in TALIS (21%). Teachers who engaged in professional collaboration such as this – which involves a high degree of interdependence among teachers – also tended to report more frequent use of effective teaching practices like cognitive activation.



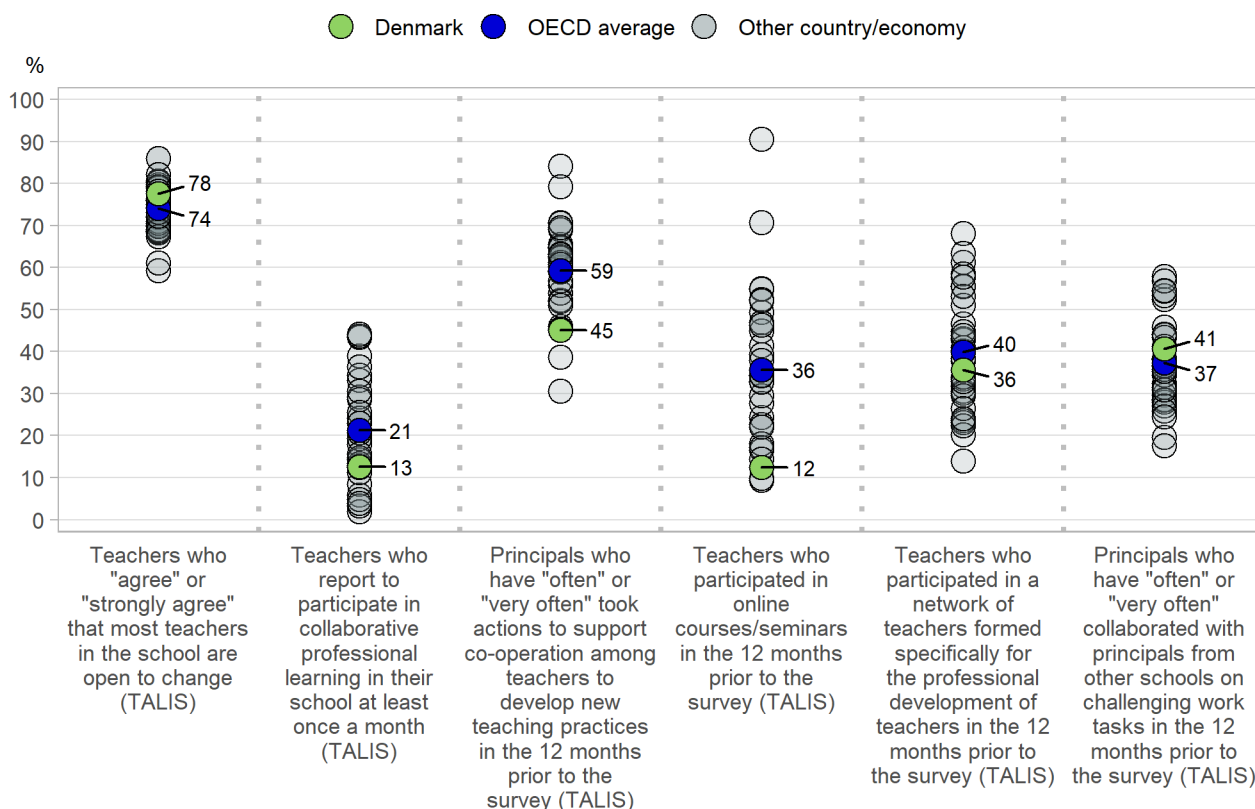
4 | Denmark - Country Note

In terms of the school leader's role in supporting innovation, 45% of principals in Denmark "often" or "very often" took actions to support co-operation among teachers to develop new teaching practices in the 12 months prior to the survey, which is lower than the average of the OECD countries participating in TALIS (59%).

School leaders and teachers may also be able to tap into online resources that could facilitate the dissemination of information, instructional material and remote learning across schools. For example, familiarity with online training can prepare teachers for communicating and sharing information with the school community through online platforms. In Denmark, 12% of teachers participated in online courses/seminars in the 12 months prior to the survey, which is lower than the average of the OECD countries participating in TALIS (36%).

Out-of-school learning communities can also be a valuable asset for mutual professional support in times of crisis. From the perspective of teachers, 36% of them in Denmark participated in a network of teachers formed specifically for their professional development in the 12 months prior to the survey, which is lower than the average of the OECD countries participating in TALIS (40%). From the perspective of school leaders, in Denmark, 41% of principals reported collaborating "often" or "very often" with principals from other schools on challenging work tasks in the 12 months prior to the survey, which is statistically not significantly different from the average of the OECD countries and economies in TALIS (37%).

Figure 3: Schools' leadership, collaboration and resources prior to the crisis



Note: Only countries and economies with available data are shown. The OECD average refers to the average of OECD countries participating in TALIS 2018.

Source: OECD, TALIS 2018 Database.



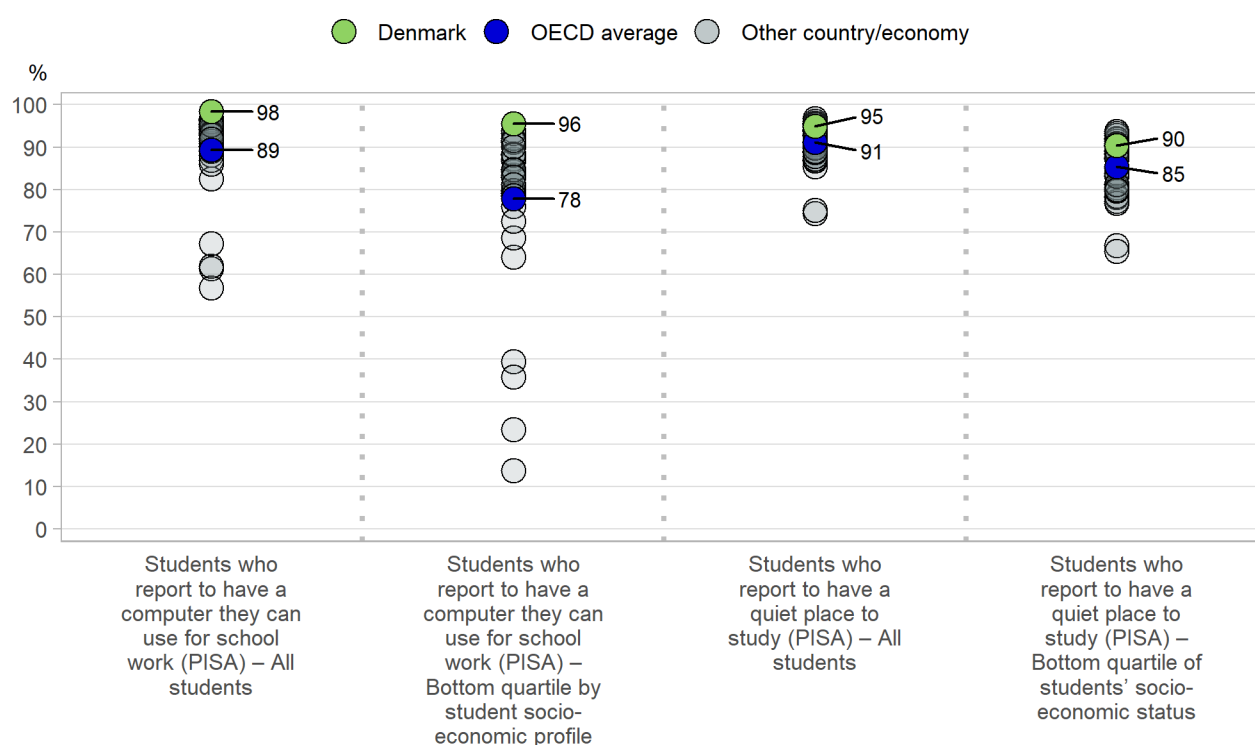
What do we know about students' conditions and environments for home schooling prior to the crisis?

Although the absence of in-person lessons can be somewhat compensated by the use of online platforms and other technology-rich activities, access to the necessary digital devices is not equally distributed across the population. In particular, students from socio-economically disadvantaged backgrounds who lack the means to access to these devices may be severely affected by the COVID-19 crisis, increasing learning inequalities as a result.

A pre-requisite for any type of online learning activity is that students have access to a computer. According to PISA 2018 data collected prior to the crisis, this is a precondition that was not met by all students before the COVID-19 pandemic hit. In Denmark, 98% of students reported having a computer they could use for school work, which is higher than the OECD average (89%). For those from the bottom quartile of the socio-economic distribution, 96% of students reported having a computer they could use for school work, which is higher than the OECD average (78%). Moreover, access to the home computer may in fact have deteriorated with the crisis in cases where its use had to be shared with other members of the household.

The conditions for creating an adequate climate for home schooling not only rely on access to technology, but also on whether an appropriate physical space for learning exists at home. In Denmark, 95% of students reported having a quiet place to study at home, which is higher than the OECD average (91%). This percentage was 90% for students coming from the bottom quartile of the socio-economic distribution, which is higher than the OECD average (85%). Much like access to computers, access to a quiet place to study may also have deteriorated during the crisis due to similar needs by parents for teleworking, and siblings for home schooling.

Figure 4: Students' home settings for online learning prior to the crisis



Note: Only countries and economies with available data are shown. The OECD average refers to the average of OECD countries participating in PISA 2018.

Source: OECD, PISA 2018 Database.



Students' attitudes towards self-directed learning and the scope for parental support prior to the crisis

The COVID-19 crisis is changing the life of millions of families around the world. Students and their families are learning to operate under a climate of uncertainty and risk-prevention, which can negatively affect students' academic motivation. Moreover, in a remote teaching and learning context, parents become a key resource for education provision as both motivators of student engagement and facilitators of student learning.

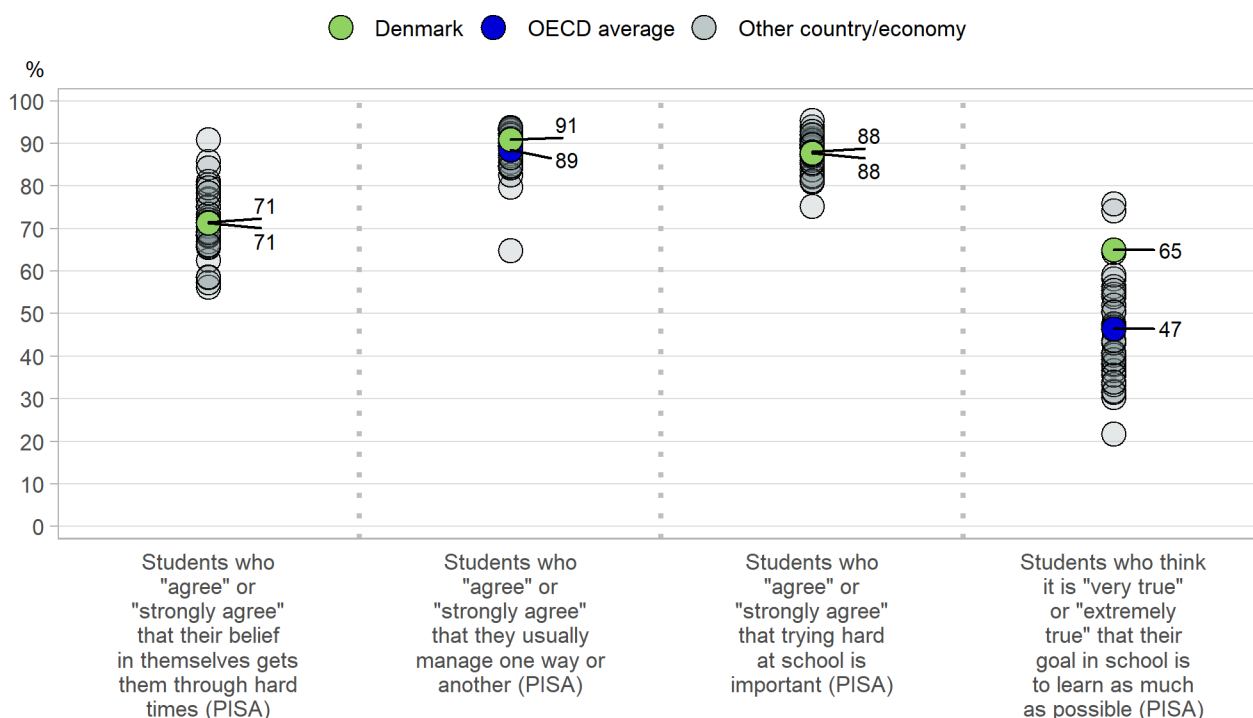
Levels of resilience and self-efficacy describe students' confidence in their ability to pursue their goals in the face of challenging situations. Based on PISA 2018 data collected before the crisis, 71% of students in Denmark "agreed" or "strongly agreed" that their belief in themselves gets them through hard times, which is the same as the OECD average (71%). At the same time, 91% of students "agreed" or "strongly agreed" that they usually manage one way or another, which is higher than the OECD average (89%).

When looking at students from the bottom quartile of the socio-economic distribution, 69% of students "agreed" or "strongly agreed" that their belief in themselves gets them through hard times, which is lower than the OECD average (71%), and 90% of students "agreed" or "strongly agreed" that they usually manage one way or another, which is higher than the OECD average (86%).

Students' learning goals at school are an important factor to estimate the level of motivation and engagement with their education during these troubled times. In Denmark, 88% of students "agreed" or "strongly agreed" that trying hard at school is important (OECD average: 88%). Also, 65% of students thought it is "very true" or "extremely true" that their goal in school is to learn as much as possible (OECD average: 47%).

Looking at students in the bottom quartile of socio-economic distribution in Denmark, 87% of students "agreed" or "strongly agreed" that trying hard at school is important, which is the same as the OECD average (87%), while 56% of students think it is "very true" or "extremely true" that their goal in school is to learn as much as possible, which is higher than the OECD average (42%).

Figure 5: Students' attitudes towards self-directed learning prior to the crisis



Note: Only countries and economies with available data are shown. The OECD average refers to the average of OECD countries participating in PISA 2018.

Source: OECD, PISA 2018 Database.

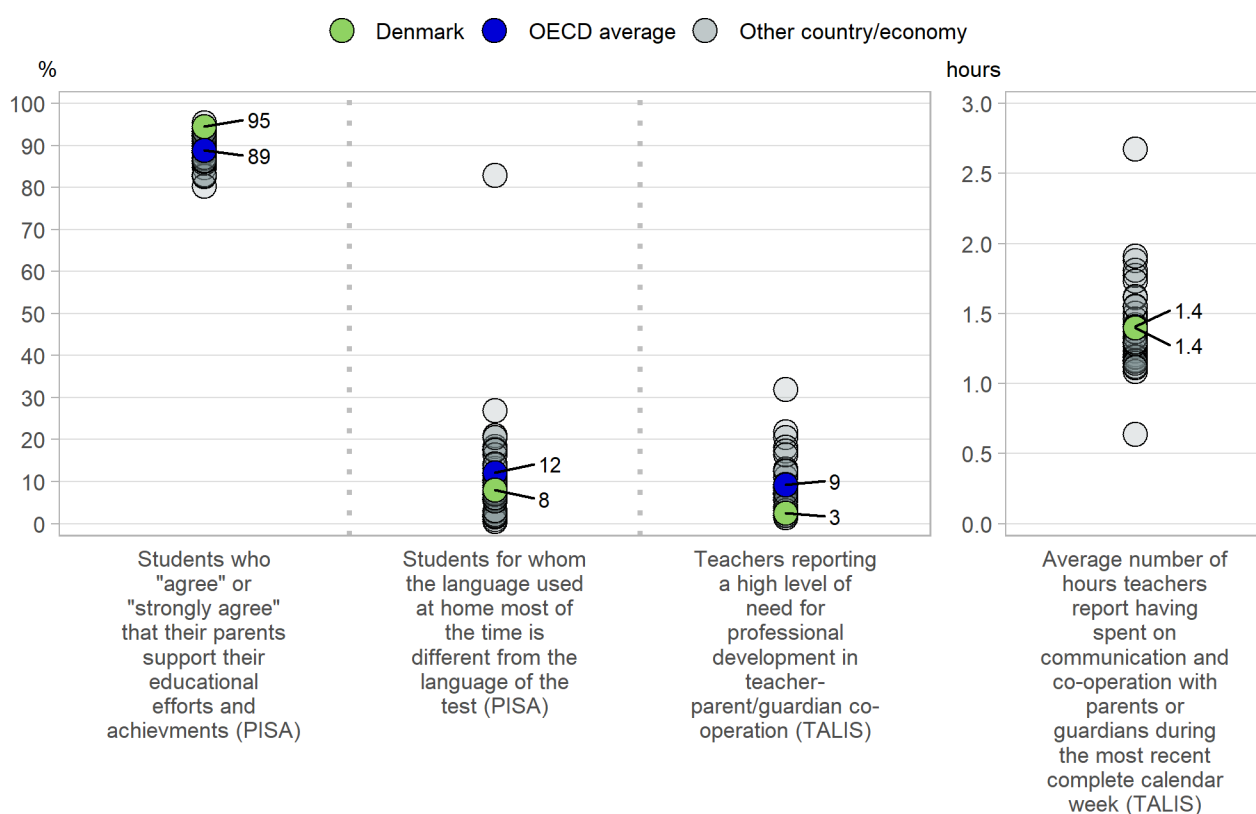


Students need the support of their parents to engage with their learning and reduce anxiety in these stressful times. In Denmark, 95% of students "agreed" or "strongly agreed" that their parents support their educational efforts and achievements, which is higher than the OECD average (89%). At the same time, 92% of students coming from the bottom quartile of the socio-economic distribution reported so, which is higher than the OECD average (85%).

Nevertheless, in some specific socio-demographic groups, the academic support of parents to students might be hindered by language barriers. In Denmark, 8% of the students reported that the language used at home most of the time is different from the language of the PISA test (OECD average: 12%). This is the case for 16% of students coming from the bottom quartile of the socio-economic distribution (OECD average: 19%).

The relationship between schools, parents and the larger school community is vital to provide contextualised and pertinent quality education. An open and fluid interaction between the school staff and parents has become now more important than ever. Yet, TALIS 2018 data show that interactions between schools and parents or guardians were not very prominent prior to the crisis. In Denmark, on average teachers reported having spent 1.4 hours on communication and co-operation with parents or guardians during the most recent complete calendar week, which is the same as the average of the OECD countries participating in TALIS (1.4 hours). Moreover, 3% of teachers reported a high level of need for professional development in teacher-parent/guardian co-operation, which is lower than the average of the OECD countries participating in TALIS (9%).

Figure 6: Parental support and assistance prior to the crisis



Note: Only countries and economies with available data are shown. The OECD average refers to the average of OECD countries participating in TALIS 2018 and/or PISA 2018.

Source: OECD, TALIS 2018 Database and PISA 2018 Database.



Background and technical note

The information provided in this country note relies on existing cross-national datasets on school education from the Directorate of Education and Skills. All the data reported correspond to time periods prior to the crisis. The sources used are the following:

- Education at a Glance is the authoritative source for information on the state of education across OECD countries and a number of partner countries. It provides comparable data and indicators on the output of educational institutions; access, participation and progression in education; the financial resources invested in education; and teachers, the learning environment and the organisation of schools. Data on instruction time refer to a typical full week of instruction without national bank holidays or other planned school closures. The values refer to classroom instruction time, excluding breaks between lessons. It assumes an equal distribution of instruction time between grades in the specified level of education.
- The Programme for the International Student Assessment (PISA) is a triennial survey of 15-year-old students around the world that assesses the extent to which they have acquired key knowledge and skills essential for full participation in social and economic life. Students also answered a background questionnaire that seeks information about the students themselves, their attitudes, dispositions and beliefs, their homes, and their school and learning experiences. In PISA 2018, all 37 OECD countries plus 42 partner countries and economies took part in the study. The PISA OECD average represents the arithmetic mean across all OECD countries.
- The Teaching and Learning International Survey (TALIS) is an international survey of teachers and school leaders on different aspects affecting student learning. 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, 31 OECD and 17 partner countries and economies participated in the study. The TALIS average represents the arithmetic mean across all OECD countries with the exception of Germany, Greece, Ireland, Luxembourg, Poland and Switzerland.
- All statements about differences between the national mean and the OECD mean are based on statistically significant testing at 95% level.

References

- OECD (2019), Education at a Glance 2019: OECD Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/f8d7880d-en>
- OECD (2019), PISA Database, OECD, <https://www.oecd.org/pisa/data/2018database/>
- OECD (2019), PISA 2018 Results (Volume I): What Students Know and Can Do, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/5f07c754-en>
- OECD (2019), PISA 2018 Results (Volume II): Where All Students Can Succeed, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/b5fd1b8f-en>
- OECD (2019), PISA 2018 Results (Volume III): What School Life Means for Students' Lives, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/acd78851-en>
- OECD (2019), TALIS Database, OECD, <https://www.oecd.org/education/talis/talis-2018-data.htm>
- OECD (2019), TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners, TALIS, OECD Publishing, Paris, <https://doi.org/10.1787/1d0bc92a-en>
- OECD (2020), TALIS 2018 Results (Volume II): Teachers and School Leaders as Valued Professionals, TALIS, OECD Publishing, Paris, <https://doi.org/10.1787/19cf08df-en>

For more information visit: <https://oe.cd/EduCovid19CountryNotes>

Questions can be directed to:

Directorate for Education and Skills
edu.contact@oecd.org

Country note authors:

Etienne Albiser, Alfonso Echazarra, Pablo Fraser,
 Gabor Fülöp, Markus Schwabe and Karine Tremblay



This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document, as well as any data and any map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at <http://www.oecd.org/termsandconditions>.

The OECD is compiling data, information, analysis and recommendations regarding the health, economic, financial and societal challenges posed by the impact of Coronavirus (COVID-19). Please visit our dedicated page <http://www.oecd.org/coronavirus/> for a full suite of coronavirus-related information.

