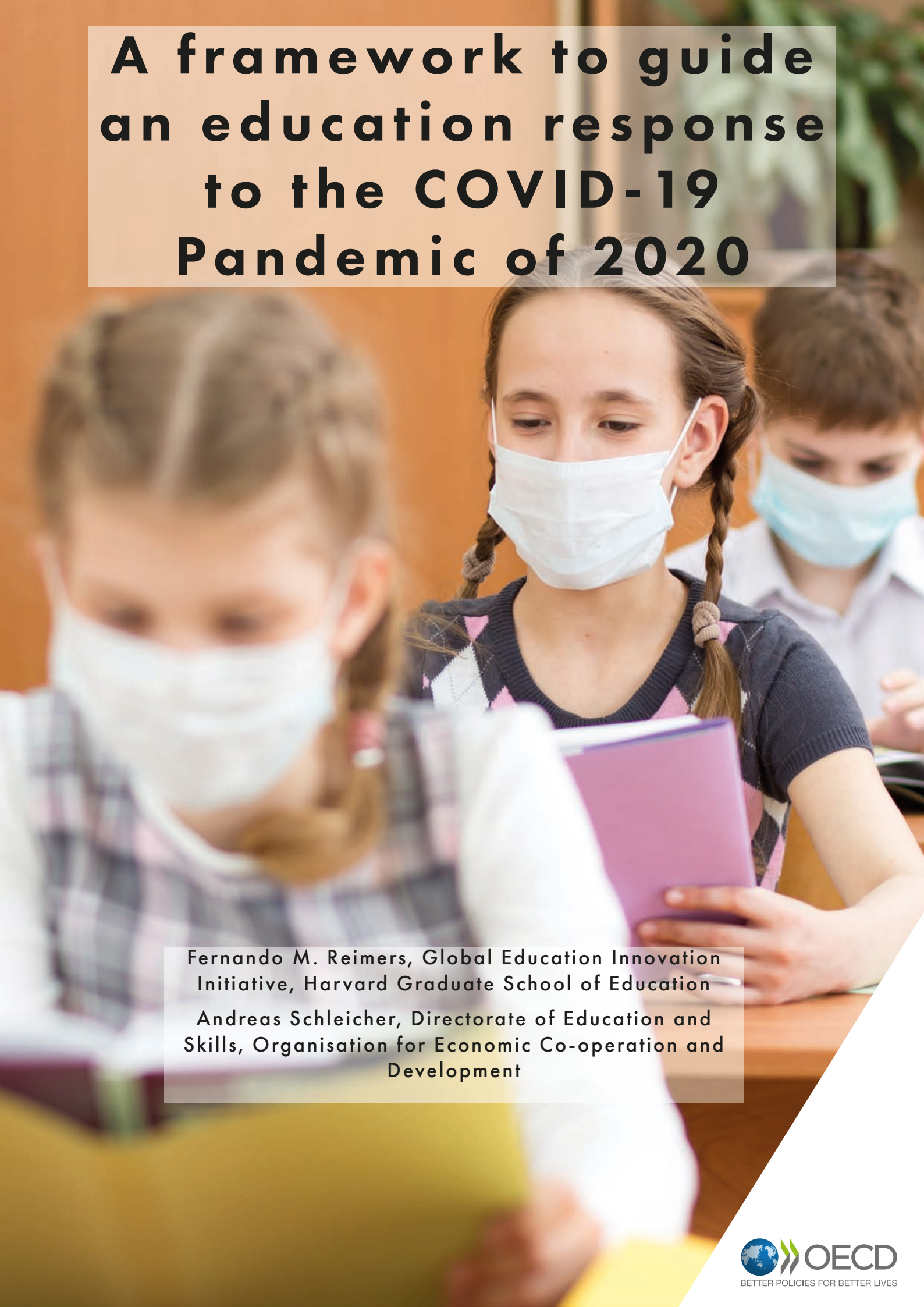
A framework to guide an education response to the COVID-19 Pandemic of 2020



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Summary

This report aims at supporting education decision making to develop and implement effective education responses to the COVID-19 Pandemic. The report explains why the necessary social isolation measures will disrupt school-based education for several months in most countries around the world. Absent an intentional and effective strategy to protect opportunity to learn during this period, this disruption will cause severe learning losses for students.

The report proposes that leaders of education systems and organizations develop plans for the continuation of education through alternate modalities, during the period of necessary social isolation. It offers a framework of areas to be covered by such plans.

Based on a rapid assessment of education needs and emerging responses in ninety eight countries, the report identifies the most salient needs that should be addressed in these plans, as well as the areas likely to face more implementation challenges. It also examines the education responses of various countries to the crisis. Based on an analysis of data from the most recent administration of the PISA survey, the report also describes the challenges facing various education systems to depend on online education as an alternative modality.

Introduction[1]

As the COVID-19 Pandemic ravages the world, it is essential to attend to the educational needs of children and youth during the crisis. This document is intended to support education leaders at various levels of educational governance, in public and private educational organizations, in formulating adaptive, coherent, effective and equitable education responses to a crisis that will significantly disrupt educational opportunities globally.

To be sure, the COVID-19 Pandemic is first and foremost a matter of Public Health, and mitigating its impact will depend greatly on the actions of scientists and pharmaceutical manufacturers in discovering a vaccine or other pharmaceuticals to prevent or treat COVID-19 infections, and of finding approaches to delivering such medicines on a broad scale. Absent effective pharmaceutical interventions, mitigating the impact of the Pandemic will depend on the actions of public health and government officials in slowing down the spread of infection, through measures such as social distancing.

"These large-scale non-pharmaceutical interventions vary between countries but include social distancing (such as banning large gatherings and advising individuals not to socialize outside their households), border closures, school closures, measures to isolate symptomatic individuals and their contacts, and large-scale lockdowns of populations with all but essential internal travel banned."[2]

Because the forecasts of the development of a vaccine place it at best in September of 2020, a full six months ahead, the main strategy available to prevent rapid spread of infections in the near future will likely consist of social distancing. While this strategy, if adopted by all or most of the population, is likely to succeed in slowing down the velocity of infection, as demonstrated in China, Japan, Korea and Singapore, its efficacy depends on timely and effective leadership by political leaders and on a receptive and disciplined response by citizens. The evidence on leadership and followership in various countries around the world is mixed, at least to date, which will require continued social distancing measures and will extend the duration of the Pandemic and augment its impact. Current and expected infections and deaths at present and in the coming months are dire. The Center for Systems Science and Engineering at John Hopkins University reports 788,522 confirmed cases globally, and 37,878 deaths, as of March 30, 2020 .[3] Researchers at Imperial College in London, estimate the global impact in the year 2020 to range between 20 million deaths, with effective non-pharmaceutical interventions in place, and 40 million deaths, without such interventions .[4] In the United States alone, Dr. Anthony Fauci, Director of the National Institute of Allergy and Infectious Diseases, estimates that the Pandemic will cause between 100,000 and 200,000 deaths . [5]

As a result of the scale of the impact of the Pandemic, this is not just a matter of Public Health. The Pandemic, and the necessary responses to contain it, will impact social, economic and political life. The restrictions on mobility created by social distance have diminished economic supply and demand, severely impacting businesses and jobs. This impact will be harder in the most vulnerable populations within countries, and in the countries with the weakest health infrastructures.

The restrictions caused by non-pharmaceutical interventions like social distancing have also impacted education at all levels, and will continue to do so for at least several months, as learners and teachers are unable to physically meet in the schools and universities.

These limitations in the ability to meet during a protracted pandemic will likely limit opportunities

1 Acknowledgement: We appreciate the helpful feedback and suggestions of the following colleagues to a draft of this document Dirk van Damme, Pablo Fraser, Luis Enrique Garcia, Aurelio Nuno, Sergio Paez, Earl Phalen, Beatriz Pont and Bella Wong.

2 Seth Flaxman, Swapnil Mishra, Axel Gandy et al. Estimating the number of infections and the impact of nonpharmaceutical interventions on COVID-19 in 11 European countries. Imperial College London (2020) page 3. https://www.imperial.ac.uk/media/imperial-college/medicine/sph/ide/gida-fellowships/Imperial-College-COVID19-Europe-estimates-and-NPI-impact-30-03-2020.pdf

3 Johns Hopkins University. Coronavirus Resource Center https://coronavirus.jhu.edu/map.html

4 Patrick GT Walker, Charles Whittaker, Oliver Watson et al. The Global Impact of COVID-19 and Strategies for Mitigation and Suppression. WHO Collaborating Centre for Infectious Disease Modelling, MRC Centre for Global Infectious Disease Analysis, Abdul Latif Jameel Institute for Disease and Emergency Analytics, Imperial College London (2020) page 2 https://www.imperial.ac.uk/media/imperial-college/medicine/sph/ide/gida-fellowships/Imperial-College-COVID19-Global-Impact-26-03-2020v2.pdf

5 Fauci Estimates That 100,000 To 200,000 Americans Could Die From The Coronavirus. National Public Radio. March 29, 2020. https://www.npr.org/sections/coronavirus-live-updates/2020/03/29/823517467/fauci-estimates-that-100-000-to-200-000-americans-could-die-from-the-coronavirus

for students to learn during the period of social distancing. It is well known that time spent learning, or learning time, is one of the most reliable predictors of opportunity to learn. In the United States, researchers have documented the effects of 'summer learning loss' demonstrating that extended interruption of one's studies causes not only a suspension of learning time, but causes a loss of knowledge and skills gained. A review of research on summer learning loss in the United States, demonstrates that during the summer vacation students lose the equivalent of one month of academic year learning, the loss is greater in math than in reading, and the loss increases with grade. The loss is also greater for lower income students .[6]

Furthermore, differences among students in support from parents who can provide for them educational opportunities directly at home or accessing them privately, differences in the capacity of different types of schools to support the learning of their students remotely, and differences among students in their resilience, motivation and skills to learn independently and online, are likely to exacerbate already existing opportunity gaps. In addition, differences across school systems in their capacity to design and implement effective education responses during the exigency, will amplify gaps in opportunity across jurisdictions. As a result, absent an intentional and effective education response, the COVID-19 Pandemic is likely to generate the greatest disruption in educational opportunity worldwide in a generation. This disruption will impact the livelihoods of individuals, and the prospects of their communities.

It is imperative, for this reason, that education leaders take immediate steps to develop and implement strategies which mitigate the educational impact of the Pandemic. We believe that cooperation can assist education leaders in devising effective education responses, and that the first and simplest form of cooperation is to exchange knowledge about what schools, communities and countries are currently doing to protect educational opportunities during the pandemic.

The purpose of this document is to support such process of exchange of knowledge. This document contains a framework to guide the development of context-specific education strategies, supported by the results of a rapid assessment conducted between March 18 and March 27 of 2020. The assessment surveyed respondents online about the education challenges created by the Pandemic, about their responses to those challenges, and about resources currently being used to advance education through alternative means. The survey we designed for this purpose is presented in Appendix A. The survey was distributed via networks of educators and influencers, those in the networks of the OECD and of the Global Education Innovation Initiative at the Harvard Graduate School of Education, with assistance from colleagues in several education organizations such as Save the Children, WISE, and others. While the survey does not represent jurisdictions or stakeholder groups, its goal was to include respondents reflecting a variety of perspectives and positions in the education sector. Respondents were asked to provide information that served to characterize their vantage point, their position, institution, the country their responses referred to, the level of government to which their responses referred. They were also asked to provide an email address for contact. Only those surveys who included responses to the majority of the questions, and who characterized their vantage point, were included.

Below we offer a checklist to guide the development of an education strategy during the Pandemic. This can be used by national, state or local education authorities or by leaders of education networks. In countries where international development organizations partner with governments to support educational development, they can take on the role of assisting in the development of the education response.

6 Cooper, H., et al (1996) The effects of summer vacation on achievement test scores: A narrative and meta-analytic review. Review of Educational Research 66(3): 227-268. https://journals.sagepub.com/doi/10.3102/00346543066003227

A checklist for an education response to the COVID-19 Pandemic

1. Establish a task force or steering committee that will have responsibility to develop and implement the education response to the COVID-19 Pandemic. To the extent possible ensure those in the task force represent different constituents in the education system or school network and bring important and diverse perspectives to inform their work, for example various departments curriculum, teacher education, information technology, teacher representatives, parent representatives, students, representatives of industry when relevant.

2. Develop a schedule and means of frequent and regular communication among task force members, during the period when social distancing will be in effect.

3. Define the principles which will guide the strategy. For example: protecting the health of students and staff, ensuring academic learning and providing emotional support to students and faculty. These principles will provide focus for the initiatives to be undertaken and will help prioritize time and other limited resources.

4. Establish mechanisms of coordination with public health authorities so that education actions are in synch and help advance public health goals and strategies, for example, educating students, parents, teachers and staff on the necessity for social distancing.

5. Re-prioritize curriculum goals given the reality that the mechanisms of delivery are disruptive. Define what should be learned during the period of social distancing.

6. Identify the feasibility of pursing options to recover learning time once the social distancing period is over, for example, an intensive review period during the break prior to the start of the new academic year.

7. Identify means of education delivery. When feasible, those should include online learning, as it provides the greatest versatility and opportunity for interaction. If not all students have devices and connectivity, look for ways to provide them to those students. Explore partnerships with the private sector and the community in securing the resources to provide those devices and connectivity.

8. Clearly define roles and expectations for teachers to effectively steer and support students' learning in the new situation, through direct instruction where possible or guidance for self-directed learning.

9. Create a website to communicate with teachers, students and parents about curriculum goals, strategies and suggested activities and additional resources.

10. If an online education strategy is not feasible, develop alternative means of delivery, they could include TV programs, if a partnership with television stations is feasible, podcasts, radio broadcasts, and learning packets either in digital form or on paper. Explore partnerships with community organizations and the private sector to deliver those.

11. Ensure adequate support for the most vulnerable students and families during the implementation of the alternative education plan.

12. Enhance the communication and collaboration among students to foster mutual learning and well-being.

13. Create a mechanism of just in time professional development for teachers and for parents to be able to support learners in the new modality of instruction. Create modalities that foster teacher collaboration and professional communities and that increase teacher autonomy.

14. Define appropriate mechanisms of student assessment during the exigency.

15. Define appropriate mechanisms for promotion and graduation.

16. As needed, revise regulatory framework in ways that make online education and other modalities feasible, and in ways that support teacher autonomy and collaboration. This includes providing school day credit for days taught in alternative education plans.

17. Each school should develop a plan for continuity of operations. As a way to support them, education authorities can provide curated examples of plans in other schools.

18. When the school provides meals to students, develop alternative means of distribution of food to students and their families.

19. When the school provides other social services,

such as mental health supports, develop alternative forms of provision.

20. Schools should develop a system of communication with each student, and a form of checking-in daily with each student. Perhaps in the form of texts from teachers if parents have access to mobile phones.

21. Schools should develop mechanisms of daily checking in with teachers and school staff.

22. Schools should provide guidance to students and families about the safe use of screen time and online tools to preserve student well-being and mental health as well as provide protection from online threats to minors.

23. Identify other school networks or systems and create forms of regular communications with them to share information about your needs and approaches to solve them, and to learn from them as a way to foster rapid improvement in delivering education in the new modalities.

24. Ensure that school leaders get the financial, logistical and moral support they need to succeed.

25. Develop a communications plan. Map key constituencies, and key messages to support the execution of the education strategy during the exigency,and ensure those are effectively communicated through various channels.

Priority responses by countries

1. Education leaders should adopt a proactive approach to contributing to the mitigation of the impact of the Pandemic and to prevent learning loss during the period of necessary social distancing. They should also contribute to the creation of opportunities to help reskill those displaced by the Pandemic and facilitate their reintegration into the labor market.
To execute on these goals education departments would benefit from establishing an agile leadership group or steering committee in charge of overseeing the education response to the Pandemic, develop a strategy with clear implementation plans, monitor the implementation of the strategy, and where possible engage with similar groups in other education jurisdictions to access knowledge about similar efforts ongoing and their results, and accelerate their learning and ongoing improvement of their strategy.
Because a Pandemic is the quintessential adaptive challenge, creating opportunities for rapid learning and continuous improvement is necessary. Also, in addressing this adaptive challenge, collaboration will be essential, everyone will need to step up, get out of the comfort zone, in order to get the job of educating students done. It may be advisable to structure the work of this task force in two different time horizons. The first one, most immediate, focused on completing the ongoing academic year. The second one, focused on the following academic year in the event a vaccine has not been developed prior to starting it and that social distance measures continue to be necessary.
These different timeframes should also influence the various options to be deployed. For example, in the short term, in the countries or school systems that do not already have an existing infrastructure to support online learning and universal access to devices, it is unlikely that online education can be deployed to deliver education. Other modalities will be necessary, of lower cost and relative ease of implementation, such as radio education or educational television. In the medium term, however, it is possible to provide the infrastructure for online learning, an investment which is likely to have benefits that extend well beyond the current predicament.

2. An effective public health response requires support from education institutions. Education systems should be working in coordination with public health authorities to educate students, parents, teachers, and the general public about the necessity of non-pharmaceutical interventions such as social distancing to curb the velocity of contagion.

3. An education strategy should prevent learning loss resulting from non-pharmaceutical interventions to mitigate the impact of the Pandemic, which is likely to be considerable, equivalent at a minimum to two months of academic learning and potentially more. It should be recognized, however, that the extraordinary circumstances under which any likely alternative modality of education could be continued during the Pandemic, make it virtually impossible for systems and institutions to achieve the same goals. This requires reprioritizing curricular goals and defining what should be learned during the period of social distancing.
To do so, every school should have a plan to ensure continuity of operations during the Pandemic. Schools could be supported in developing such plans for continuity by curating and providing access to similar plans developed by other schools. For example, a school in Atherton, California, explains how they drew on comparative analysis to develop their plan:

"Greetings from Silicon Valley. In the spirit of sharing and international collaboration, we're sending out our Flexible Plan for Instructional Continuity at Sacred Heart Preparatory, Atherton. Our plan is the product of collaboration with colleagues on our campus and around the world. We have built on our own experience and the experiences of others. Our plan is based on known best practices for face-to-face and remote instruction. But also, it responds to lessons learned from colleagues at international schools and schools around the world who suddenly had to close for multiple weeks at a time as a result of pandemic. We are grateful to our teaching colleagues around the world who have generously offered their insights and experiences, most especially the Taipei American School in Taiwan and the Concordia International School in Shanghai."

4. Second only to supporting learning, a key priority of education institutions should be the well-being of students and staff. Maintaining effective social relationships between learners and educators will contribute to that goal. A protracted pandemic, and its multiple effects in the health, income and well-being of individuals and communities, is likely to strain the psychological reserves of all, including students and teachers. Educators and leaders of education systems should make explicit and visible their goals for well-being, and pursue strategies that help maintain well-being in the face of a global health event that will have a considerable toll in the lives and health of individuals, which may include members of the communities in

which students live. As such impact becomes proximal to every learner and educator, this may impact their motivation and functioning. For this reason, continuing educational activities, in some form, may contribute to the well-being of students during the crisis, maintaining a sense of normalcy and regularity in an otherwise unpredictable situation where the normal functioning of individuals is constrained by the limitations on mobility.

The development of skills, attitudes and values purpose, resiliency and self-efficacy, should be explicitly cultivated through activities that foster connection and affirmation. There is a potential tradeoff between ensuring well-being and significantly increased screen time derived from a transition to distance learning. Education systems and institutions need to decide the right balance with respect to this tradeoff. It will also be desirable to explicitly suggest that institutions provide guidance to parents and students about the safe use of online tools, social networking, television and video gaming.

5. It is imperative to support forms of organization that provide students time to engage in predictable and structured learning opportunities. When possible, those should draw on on-line activities because they provide the richest modality for interactive learning. Achieving this would require ensuring access to devices and connectivity for the students who do not have them. When this is not possible, other modalities such as television, radio, podcasts, DVDs and learning packets should be used for the delivery of educational content to students. This content should be designed to provide students opportunities for response and interaction. It may be necessary to have two different strategies for the short and medium term, in the event the Pandemic is not controlled before the start of the next academic year. In the short term, there it is likely not feasible to create an infrastructure of connectivity and to provide devices to all students in systems where those are not already available. As a result, it may be necessary to depend on lower cost technologies such as radio and educational television. However, it is imperative to invest in the development of such infrastructure where it is lacking, something which is difficult to do out of the ordinary education budgets, but which the response to this Pandemic may contemplate as an essential investment. This investment could provide devices to students and teachers and connectivity, to support a model of online learning that allows the greatest possible interaction in real time among students, among students and teachers, and with parents, as well as the creation of school networks and professional teacher communities across schools.

6. The role of teachers is essential to the success of the learning experience, even more so than the physical environment of schools or the technological infrastructure. When the structuring power of time and place that schools provide, dissolves and online learning becomes the dominant mode, the role of teachers does not diminish, quite on the contrary. Through direct instruction or through guidance provided in self-directed learning, in synchronous or asynchronous modes, the teacher remains essential in steering students' learning.

7. It is critical to facilitate teacher professional collaboration and learning, and to provide teachers with access to resources and online platforms for collaboration (technology and curated education resources) so they can keep abreast of the rapidly evolving challenges and the educational and social responses that are needed, and can support learning for their students in whatever modality of deliver is feasible, ideally online. Building partnerships between schools and higher education institutions might be a way to augment the capacity of districts and school systems to provide adequate professional development to teachers and to parents.

8. It is essential to create curated catalogues of high quality education resources aligned with the standards and, when a curriculum is available at the national, state or local level, to the curriculum, as a way to facilitate access to relevant learning materials to learners and teachers. Where curation by government authorities is not feasible, crowd-sourcing supported by reputational metrics can serve as a substitute, including rating systems which include the views of teachers on the value of different sites. It is unreasonable to expect teachers to curate their own resources.

9. In many jurisdictions schools provide various social services, as well as meals, to students. Alternative delivery mechanisms should be developed to continue the supply of those critical services and supports. Doing so may require the same flexibility necessary to support the innovative responses suggested in this document, for instance, instead of delivering meals, which may be logistically complicated, it may be more effective to transfer funds to families using the banking system, which tends to function effectively in most countries. Every effort should be made to facilitate links and collaboration between teachers and families.

10. A communications strategy is critical to help maintain coherence and collaboration as the entire school system seeks to support education during the pandemic. A critical element in a communication strategy is communication with families. Conventional

means of communications, voice mails and flyers, may not be adequate, so depending on trusted school staff, or the home school liaisons, may help keep parents informed of what they can do to support their children, and supported in doing it.

11. Regulatory frameworks need to allow educational institutions the necessary flexibility to develop adaptive responses to the crisis. For example, in those jurisdictions where online instruction is not recognized by government authorities as an alternative to face to face instruction, those barriers should be removed. Similarly, greater flexibility may be required for the work organization of teachers and for teachers to adjust the balance between educational services, social support, teacher professional collaboration and work with families. Furthermore, teacher candidates may not be able to complete the required hours of practicum stipulated in the licensure requirements of their jurisdiction. Educational institutions may need greater flexibility to determine how to assess that teacher candidates have demonstrated the necessary competencies to graduate.

Similar flexibility in responding to this serious adaptive challenge will be required of unions in interpreting contracts in ways that support teachers in working in the ways the exigency demands if students are to be educated during the Pandemic.

12. Similar flexibility with respect to funds and regulations would enable supporting innovative ways to educate students during the Pandemic, perhaps with potential valuable long term effects. For example, the current Pandemic is an opportunity to increase parental engagement, and to support parents in gaining competencies to parent in effective and supportive ways. In some countries there are shortages of teachers, and this opportunity could be a way to build a pathway for future teacher aides or teachers, using workforce development funds to train parents to be educators. This would also mitigate the financial impact of this crisis on the lower income households.

13. Because the economic dislocations caused by social distancing, those dislocated will require assistance reintegrating into the labor force, once the distancing measures are lifted. The period of distancing is an opportunity to provide online learning opportunities for job skill development. Governments should explore partnerships with the private sector to extend the availability of those opportunities through online or similar modalities during the exigency.

How are countries responding to the Pandemic?

We included 330 responses to the survey in the analysis, representing 98 different countries. A few of the responses were from educational organizations working in multiple countries. For most countries (75) three or fewer surveys were received, but 13 countries were represented with more than five surveys. Table 1 presents the number of surveys that were received per country.

Table 1 • Countries which responded to the survey and number of responses received per country

Country	Number of Respondents	Country	Number of Respondents	Country	Number of Respondents
Afghanistan	10	Haiti	1	Paraguay	1
Algeria	4	Honduras	2	Peru	4
Argentina	6	Hungary	2	Philippines	5
Australia	3	Iceland	2	Poland	5
Austria	2	India	14	Portugal	3
Bahrain	2	Iran	1	Puerto Rico	2
Bangladesh	5	Iraq	2	Qatar	1
Belgium	3	Ireland	4	Romania	2
Benin	2	Israel	3	Russian Federation	1
Botswana	1	Italy	6	Saudi Arabia	1
Brazil	3	Japan	4	Singapore	1
Bulgaria	2	Jordan	2	Slovenia	1
Cameroon	2	Kenya	5	South Africa	7
Canada	3	Kosovo	1	South Korea	3
Chad	1	Kuwait	1	Spain	19
Chile	2	Kyrgyzstan	1	Sudan	1
China	3	Latvia	1	Sweden	2
Colombia	6	Lebanon	1	Switzerland	1
Comoros	1	Liberia	1	Tanzania	3
Costa Rica	6	Lithuania	2	Thailand	1
Czech Republic	2	Malawi	1	Tunisia	5
Ecuador	3	Malaysia	2	Turkey	3
Egypt	3	Malta	1	Uganda	2
El Salvador	3	Mauritania	1	UK-Spain-Brazil	1
England	1	Mexico	15	UAE	6
Estonia	4	Middle East	1	United Kingdom	4
Finland	2	Nepal-Cambo-dia-Myanmar	1	United States of America	25
France	12	Nepal	2	Uruguay	2
Georgia	1	Netherlands	3	Vietnam	1
Germany	4	Nigeria	5	Yemen	1
Ghana	3	Norway	1	Zambia	1
Global	3	Pakistan	8	Zimbabwe	2
Greece	2	Palestine	1		
Guatemala	1	Panama	1		

Source: Source: Global Education Innovation Initiative at Harvard and OECD Rapid Assessment of COVID-19 Education Response. March 18-27, 2020

The respondents included teachers, School coaches and advisors, School Principals, School superintendents, Professors, Technical and managerial staff in civil society organizations in education including providers of professional development, education administrators, advisors and policy makers in Ministries of education and in private school networks, technical and administrative staff in international development organizations, and education consultants.

School closures and changes in education delivery

According to the respondents, in the vast majority of the countries there has been a government directive that students and teachers do not come to school. The duration of the directive ranges from two weeks to a month, renewable. In a few cases the suspension of classes is indefinite. Only in four countries: Comoros, Honduras, the Russian Federation and Singapore has attendance to school not been suspended as of March 20th. In a few countries the policy response includes a mix that provides some discretion to schools to suspend classes. In Argentina Schools are open with teachers working in rotative shifts only to deliver teaching resources and food for those in need. In Australia and Benin there has not been a government directive to suspend activity in schools, but some schools have suspended them on their own. In Bahrain students were asked to not come to school, but teachers, except for mothers, have been asked to continue to come to school.

When asked what has the government or network of schools done to date to support the ongoing academic instruction of students, a large percentage indicate 'nothing', followed by providing encouragement to schools to use online resources. Some of the responses suggest that guidelines from the Ministry are not anchored in the realities of schools. Several of the respondents mention clear plans with an implementation strategy that can support schools in continuing instruction during the crisis. Some schools have been able to rely on online platforms to continue instruction and in some countries, governments are relying on educational television to broadcast content. The following responses illustrate some of the government or school network initiatives to sustain instruction:

- "Provide online teaching materials and resources" **(Argentina)**
- "Encourage remote/online learning with Prof. Learning. Each school using platforms available and easy for staff and students to learn and access. (eg Google Drive/Microsoft Teams)" **(Australia)**
- "Educational programmes are being broadcast on national television / emphasize the importance to continue "home education"" **(Belgium)**
- "The school organizes teachers of various subjects to conduct online teaching, and the provincial and municipal education departments organize experts to provide the school with teaching resources and teaching plans." **(China)**
- "Begun to put together online reading and other study resources and to make public television and webpage, social media announcements about how to access those resources." **(Costa Rica)**
- "The Ministry has launched a website: https://nadalku.msmt.cz/cs with tools for online education." **(Czech Republic)**
- "Ministry of Education and Research (MoER) provides daily support and guidelines for all educational institutions, incl. youth work (hobby schools, open youth centres) , https://www.hm.ee/et/koroonaviiruse-leviku-tokestamine-info-haridusasutustele . Additionally, Foundation Innove (https://www.innove.ee/uudis/info-ja-nouanded-vanematele-oma-lapse-toetamiseks-COVID-19-pandeemia-ajal/) and Information Technology Foundation for Education (https://www.hitsa.ee/e-ope-korduma-kippuvad-kusimused) are providing support, information and guidelines on distance learning issues. In Estonia, all learning materials are already now available on paper and online in parallel. Therefore, many schools have been using digital version in the past and do not need extra support or guidance. We are currently working on supporting the ICT-systems to be able to provide full services to all schools, teachers, students and parents. Furthermore, on Sunday 15 March an open webinar was held (supported by the MoER) to provide guidelines for parents for supporting students in their distance learning activities. Conversation rounds between the education inspectors of the MoER and educational specialists of the local authority to show support, determining best practices and problems that have arisen. Inspectors concentrate and share best practices across the country and find solutions to problems." **(Estonia)**
- "Schools are asked to ensure to arrange education

services in exceptional conditions. Finnish National Agency for Education is guiding schools to plan and organize different kind of flexible learning arrangements. The pupils are asked to stay at home if the education is organised as distance education." **(Finland)**

- "A pedagogical continuity is put in place to maintain regular contact between the student and their teachers. To this end, the teachers shall ensure, in particular by making use of existing networks (in particular digital workspaces, electronic mail or similar tools specific to private schools), that students have access to course materials and are able to carry out the homework or exercises required for their learning. This pedagogical continuity service can also be based on a free pedagogical platform of the Cned: "My class at home". This service offers the possibility of holding virtual classes, thus maintaining the human link between the pupil, his classmates and his teachers." **(France)**
- "Lessons will be broadcast from March 30. TV-lessons cover all mandatory subjects in grades I-XII except of foreign languages and sport. Besides, the EMIS - Education Management Information system - the agency under the Ministry of Education has conducted the following activities:

  1. A Microsoft Office 365 user profile (up to 600,000 students and up to 55,000 teachers) has been created for Georgian public schools (administration, teachers, and students);

  2. A portal has been created that allows the student and parent to access the student profile without the administration of the school and the teacher.

  3. Virtual classrooms have been created for all school classes and subjects in the Microsoft TEAMS program;

  4. Virtual consulting spaces have been set up in all districts of Georgia where volunteer technology experts from the "New School Model" help teachers implement distance learning;

  5. Data is being collected to establish access of teachers and students to the Internet and digital technologies; According to the statistics: In Teams there are 750 active users daily, by the April 23 Teams has 138698 users; Number of Active Users in Office 365 on March 23 - 143140; Email active username number on March 23, 14329; OneDrive active username on March 23, 12484; Besides, Ministry's project "New School Model" support team will actively work with reform schools to refine distance learning practices and share experiences with other schools / teachers." **(Georgia)**
- "Teaching has been shifted to digital. The government tries to give support for this to schools/ teachers but most of the initiatives seem to be bottom up. One witnesses a remarkable dynamism and activity in many schools." **(Hungary)**
- "National lessons daily broadcasts by exemplar k12 teachers (24 classrooms, simultaneously, 6h a day- for both Arabic and Hebrew speakers); Supporting teachers skills- digital classroom environments and webinars; Digital learning tasks and rich media content up to 80% of national curriculum available via teacher portal as well as student and parents portals." **(Israel)**
- "The Ministry of Education has : created dedicated online pages, video tutorials and virtual meeting places; offered e-learning platforms; provided a supporting task force; coordinated a plurality of actions in order to develop new learning environments; facilitated the use of digital content and new models of didactic organization; provided teachers with free remote training and updating tools, also through regional working groups; provided technical assistance to schools; started monitoring initiatives; introduced forms of economic support for socio-economically disadvantaged students." **(Italy)**
- "National Government, MEXT (Ministry of Education, Culture, Sports, Science and Technology), supports local boards of education providing adequate measures as much as possible to support children's study, such as initiating appropriate home study programs and conducting supplementary lessons after the ending of the school closures. MEXT has also set up and is publicizing a learning support portal, which introduces various suggestions and tips for learning each subject, free learning materials and videos that can be used at home, etc., in addition to the website for sharing good practice taken at schools and boards of education. Also METI provides information of on-line learning with their website." **(Japan)**
- "The National Centre for Education (which is subordinated to the Ministry of Education and Science of the Republic of Latvia) has developed the Methodological Guidelines for Professional and General Education Institutions for the Implementation of Distance Learning to support the implementation of distance learning at all schools. It provides advice to school leaders, teachers and parents on how to organize and adapt the learning process to the distance mode, how to modify the

learning programme, suggests available ICT tools and platforms, as well as provides guidelines how to ensure the well-being all teachers and pupils. In addition, Guidebook to Parents, Guidebook to Teachers and ICT Recommendations to Teachers have been published online. These materials are available on the website of the Ministry of Education and Science in Latvian and Russian as the two main languages of instruction https://www.izm.gov.lv/lv/macibas-attalinati. The National Television of Latvia in cooperation with the National Centre for Education has prepared a special weekly selection of educational and entertainment TV programmes for different age groups. The National Television also broadcasts famous theatre plays for school age audiences. With coordination of the Ministry of Education and Science technological support is provided to learners who do not have the Internet at home. The largest mobile network operators LMT and BITE are supplying mobile phones and tablets to about 5000 pupils (about 3% of the total number of school pupils) in Latvia. Steps are taken in cooperation with the ICT associations and municipalities to increase the streaming capacity of Internet connection to some schools in Latvia. To ensure the continuity of learning process, it is allowed that printed textbooks and printed learning materials are made available to pupils. Some schools prepare special daily packages of textbooks and printed materials to be delivered to pupils." **(Latvia)**

- "Schools responded very rapidly, establishing remote contact with the students. We developed a support network with guidance for the preparation of online classes, organizational matters, and making available a wide array of free open content resources. Right now, we are preparing for the 3rd term, providing an orientation guide for the organization of the school, schedules, roles for a normalization of the 3rd term. The big challenge posed in this context is reaching out to the low SES students. We created a network of partner institutions ensuring some contact, but this is an urgent matter." **(Portugal)**
- "Provided support for moving courses online through partnerships with various providers (Google, Microsoft etc.), signed a partnership with the national television channel for a Teleschool programme, work to readapt the calendar of school activities in order for the school year to finish normally for students, without students needing to repeat the year" **(Romania)**
- "(1) Particularly for those pupils and students in primary, secondary and upper secondary vocational education who do not have the necessary devices themselves and for whom this is not arranged through the school or the municipality, an investment of 2.5 million euros to ensure pupils and students have the necessary devices for online learning. (2) Primary and secondary schools can remain open for children from whom the parents are working in critical jobs like health and policing. (3) Educational institutions in higher and upper secondary vocational education can remain open to facilitate students who cannot use distance learning at home. Institutions can make their own choices for dealing with facilities on campus as long as they fit within the general instructions with regards to the pandemic. (4) The internships and other education-related activities outside the institution can continue, unless the employer has to stop the activity due to the pandemic. The safety of the student is paramount. (5) Informing students who are studying abroad has our special attention. (6) Together with educational organizations and the municipalities, we made additional agreements about how all children receive the best possible education during this time of crisis, please see our answers to the other questions." **(Netherlands)**

Curriculum and resources

When asked if particular areas of the curriculum had been prioritized, a majority of the respondents indicated that no prioritization has taken place.

When asked to identify what instructional resources had been deployed to support the academic instruction of students while they are unable to come to school, a wide range of platforms and online sites with education content were mentioned. They are listed in Appendix B.

Very few respondents mentioned they were relying on instructional packages, radio broadcasts or podcasts to support home instruction. Some respondents mentioned that countries were relying on public television stations to broadcast daily programs focused on some subjects and grades.

When asked what resources were been used to support the professional development of teachers in guiding online instruction very few respondents provided answers to this question. The following are examples of those exceptional cases which responsed:

"Opentunti https://opentunti.fi/ Yle Triplet: https://yle.triplet.io/ www.amazingeducationalresources.com Collection of tools and material supporting remote learning https://yle.fi/aihe/oppiminen The openly available open education resources and learning material: aoe.fi- Library of Open Educational Resources (OER), which can be used for searching, finding, compiling, and sharing open educational resources from all levels of education Finna.fi - the collections of Finnish archives, libraries and museums. There are also separate material banks and lists for teaching circulating among teachers and supporting also self-learning" (Finland)

"https://www.cned.fr/maclassealamaison/ Online websites of the ministry of education provide some guidelines. The universities have also begun providing some information/guidelines, for examples on how to use virtual tools such as Zoom." (France)

"National Institute for School Teachers and Staff Development (NITS) provide several program for teachers. https://www.nits.go.jp/en/" (Japan)

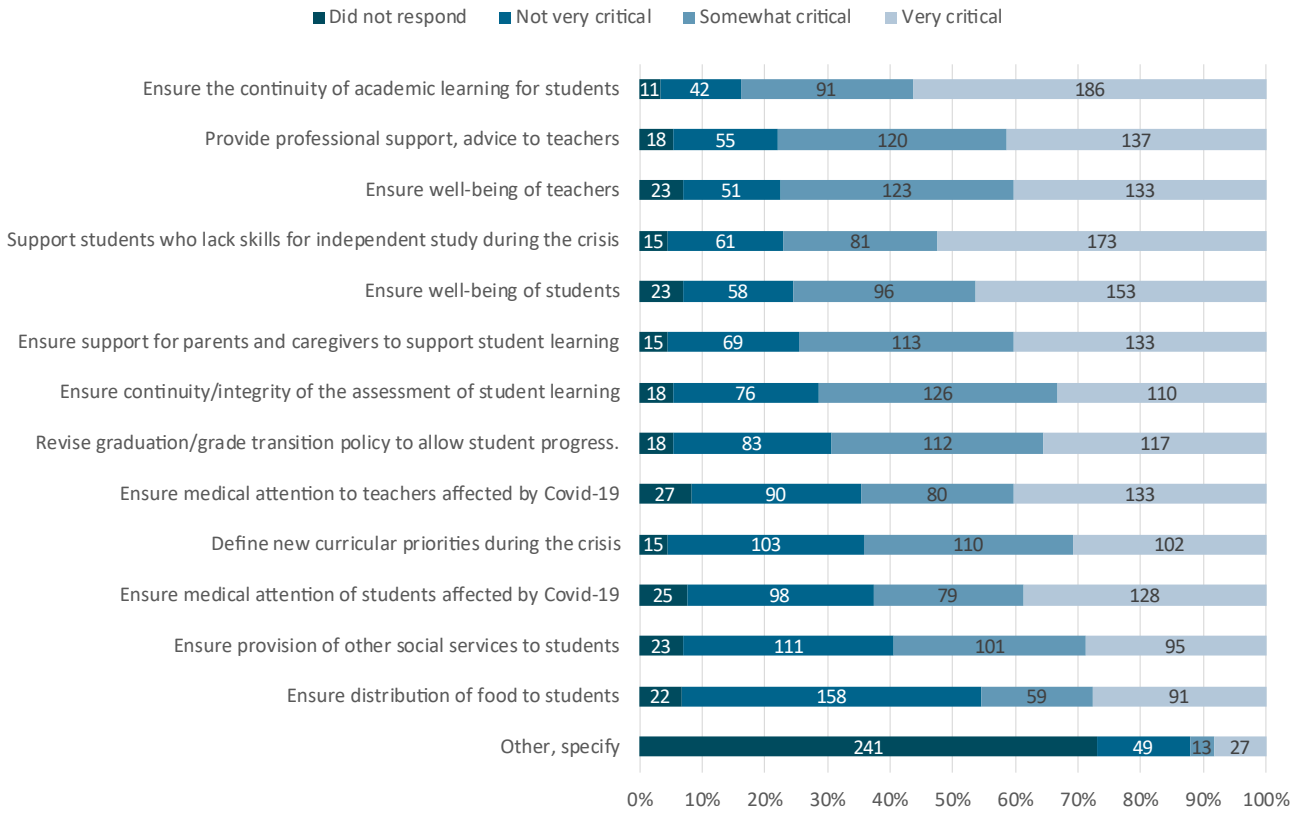
"Learning resources (in Latvian): https://mape.skola2030.lv, https://visc.gov.lv/. Tools for teachers for online learning, assessment and interaction with students: https://socrative.com, https://create.kahoot.it, https://quizizz.com, https://quizlet.com. Practical information, tools and advice on distance learning, and a special Q&A section on distance learning is available on the websites of the Ministry of Education and Science https://www.izm.gov.lv/lv/macibas-attalinati and the National Centre for Education https://visc.gov.lv/aktualitates/info_20200318.shtml" (Latvia)

What needs do respondents identify as most critical at this time?

Respondents were asked to rank the importance of government decisions during the crisis with respect to a series of topics. The responses are presented in the following table. The domains identified as highest priority are: ensuring academic learning for students, supporting students who lack skills for independent study, ensuring the well being of students, providing professional support for teachers and ensuring wellbeing of teachers and medical attention to teachers. However, a significant number of respondents see also as very critical or somewhat critical other priorities such as revising graduation policies, ensuring integrity of the assessment process, defining new curricular priorities and ensuring provision of social services and food to students.

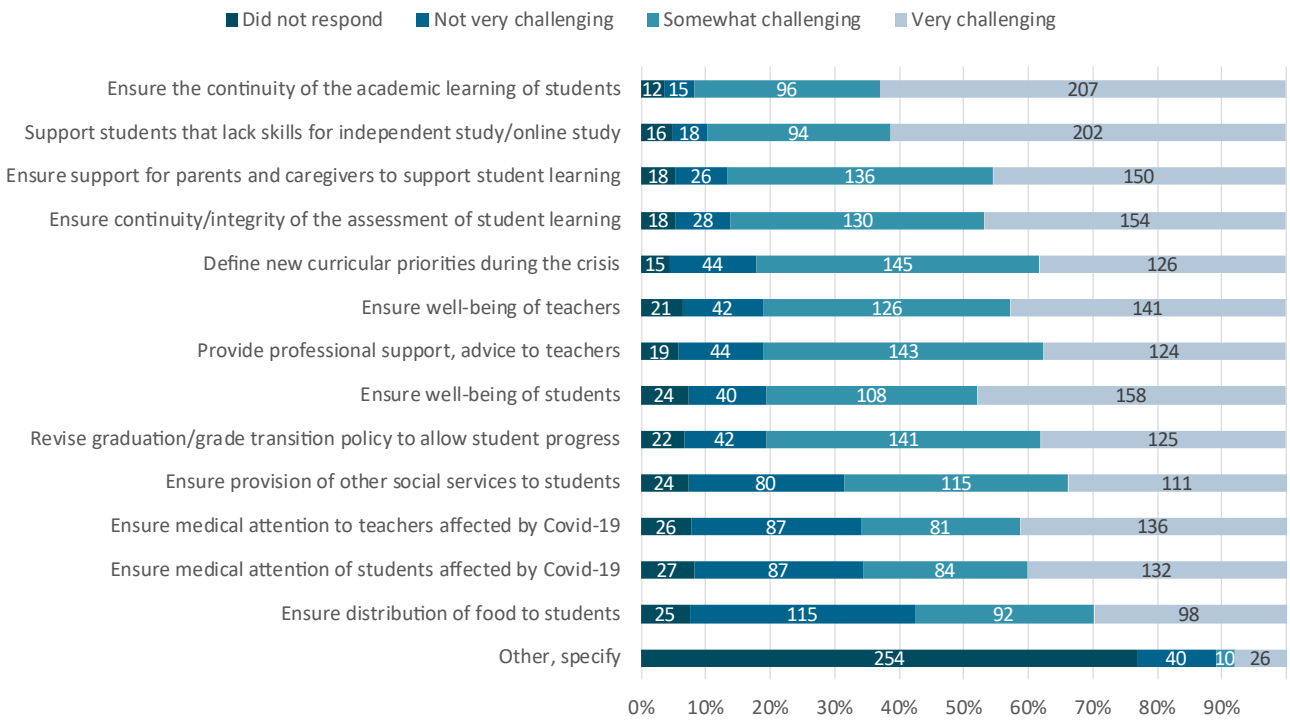
Respondents were also asked to identify which of those issues would be the most challenging to address. The responses are available in Table 3. The issues identified as very challenging by most respondents are ensuring the continuity of academic learning for students, supporting the students who lack skills for independent study, ensuring continuity and integrity of the assessment of student learning, ensuring support for parents so they can support student learning, and ensuring the well-being of students and of teachers. A considerable number of respondents, however, also considered the remaining topics as very challenging.

Table 2 • How critical are the following education priorities in response to the crisis?



Source: Global Education Innovation Initiative at Harvard and OECD Rapid Assessment of COVID-19 Education Response. March 18-27, 2020

Table 3 • How challenging would it be to address the following priorities?



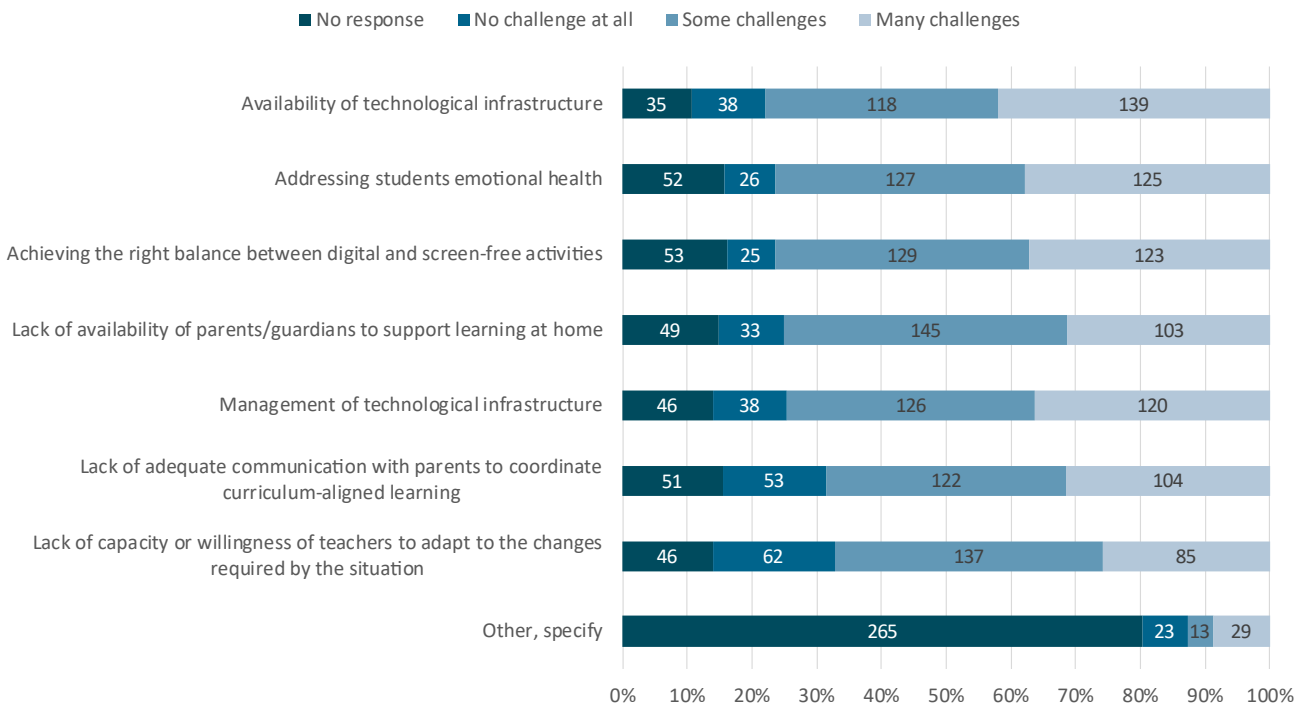
Source: Global Education Innovation Initiative at Harvard and OECD Rapid Assessment of COVID-19 Education Response. March 18-27, 2020

Education Response to the COVID-19 Crisis

The domains for which most people considered that an education response involved the most challenges were the availability of technological infrastructure, addressing student emotional health, addressing the right balance between digital and screen free activities and managing the technological infrastructure. These results are shown in Table 4.

These results are consistent with the results from the PISA 2018 survey. According to PISA, even among OECD countries, an average of 9% of 15-year-old students do not even have a quiet place to study in their homes, and in Indonesia, the Philippines and Thailand this figure is over 30%. Even in Korea, a top-performer in PISA, one in five students from the quarter of the most socio-economically disadvantaged schools don't have a place to study at home. Access to a computer that students can use to do their work in their homes poses similar challenges. In Denmark, Slovenia, Norway, Poland, Lithuania, Iceland, Austria, Switzerland and the Netherlands, over 95% of students report that they have a computer to use for working at home, but in Indonesia it is only 34%. For example, virtually every 15-year-old in socio-economically advantaged schools in the United States has a computer to work with at home, but only three out of four students in disadvantaged schools have one; and in Peru, it is 88% of students in privileged schools, versus just 17% in disadvantaged schools.

Table 4 • How challenging has it been to implement the following?

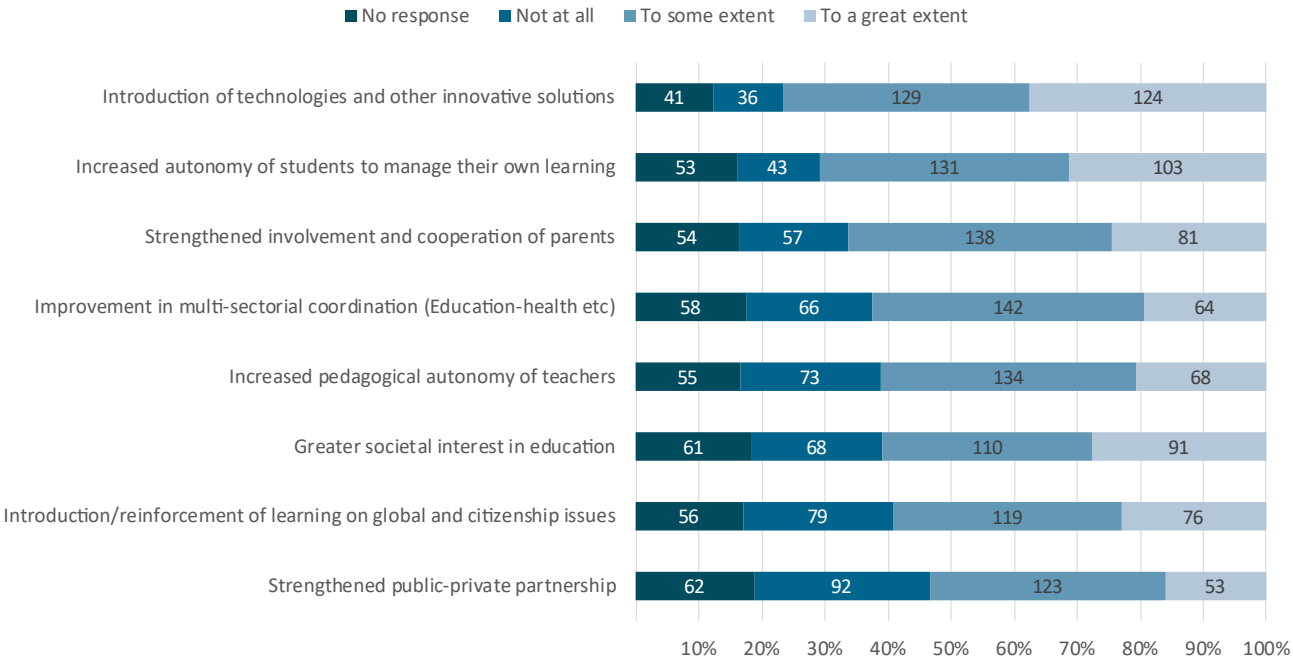


Source: Global Education Innovation Initiative at Harvard and OECD Rapid Assessment of COVID-19 Education Response. March 18-27, 2020

Is there an education silver lining to this crisis?

A significant percentage of the respondents of the survey see that unexpected positive educational results of the changes caused by the crisis include the introduction of technologies and other innovative solutions and an increase in the autonomy of students to manage their own learning as seen in Table 5.

Table 5 • Have there been unexpected positive educational results from the changes?



Source: Global Education Innovation Initiative at Harvard and OECD Rapid Assessment of COVID-19 Education Response. March 18-27, 2020

Readiness of students and schools to learn online during the Pandemic. Insights from PISA.

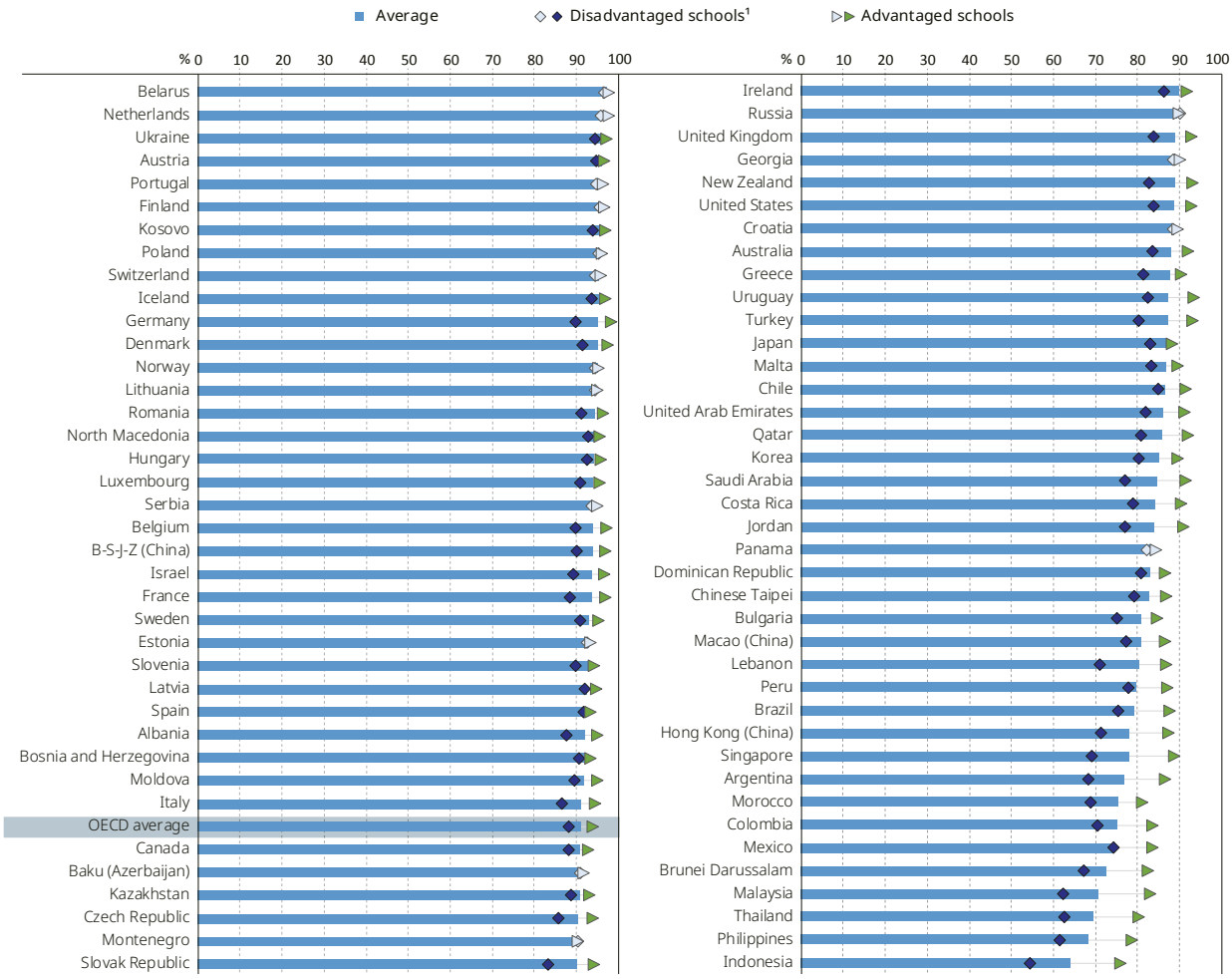
The evidence provided by the OECD's Programme in International Student Assessment (PISA) shows that most of the education systems participating in the most recent administration of PISA in 2018 are not ready to offer most students opportunities to learn online. The figures are based on representative samples from 79 education systems involving over 600,000 15-year-olds. Unless otherwise noted, numbers refer to average across the 36 OECD countries. Figures not provided in this note are accessible through the PISA database.

Student access to the digital world

To start with the very basics. On average across OECD countries, 9% of 15-year-old students do not even have a quiet place to study in their homes, and in Indonesia, the Philippines and Thailand this figure is over 30% (Figure 1). This is not a random group, but it tends to be students from the most disadvantaged backgrounds. Even in PISA top-performer Korea one in five students from the quarter of socio-economically

Figure 1 • Access to a quiet place to study

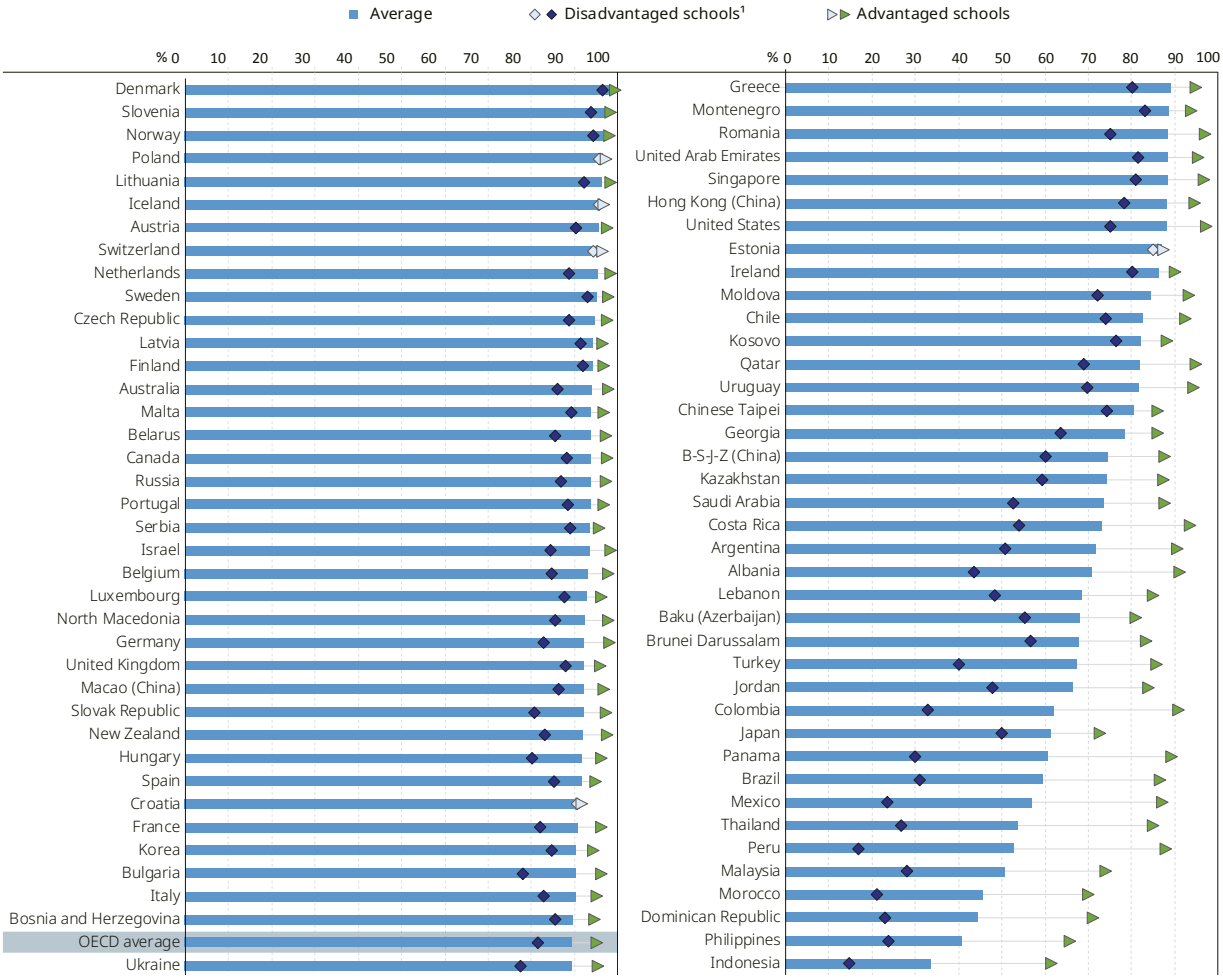
Percentage of students that have access to a quiet place to study, PISA 2018



Note: 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 average percentage of students that have access to a quiet place to study.
Source: OECD, PISA 2018 Database

Figure 2 • Access to a computer for schoolwork

Percentage of students that have access to a computer they can use for schoolwork, PISA 2018



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Countries and economies are ranked in descending order of the average percentage of students that have access to a computer they can use for schoolwork.
Source: OECD, PISA 2018 Database

most disadvantaged schools don't have a place to study at home.

Online learning doesn't just require a place to study, but also a computer which students can use to their work in their homes. Here too, the PISA data reveal important gaps (Figure 2). While in Denmark, Slovenia, Norway, Poland, Lithuania, Iceland, Austria, Switzerland and the Netherlands over 95% of students report that they have a computer to use for their work at home, it is only 34% in Indonesia. Here, too, there tend to be very large gaps across socio-economic groups. For example, virtually every 15-year-old in socio-economically advantaged schools in the United States has a computer to work in their homes, but only three out of four students in disadvantaged schools have one. And in Peru, it is 88% of students in privileged schools but just 17% in disadvantaged schools who have a computer for work.

Then there is internet required for online learning. Here again, there are countries where internet access at home is close to universal while in others it reaches just half of 15-year-olds (Figure 3). In Mexico, 94% of 15-year-olds from privileged backgrounds have a link to the internet in their homes, but just 29% of those from disadvantaged backgrounds. This is an area where also geography matters in many countries.

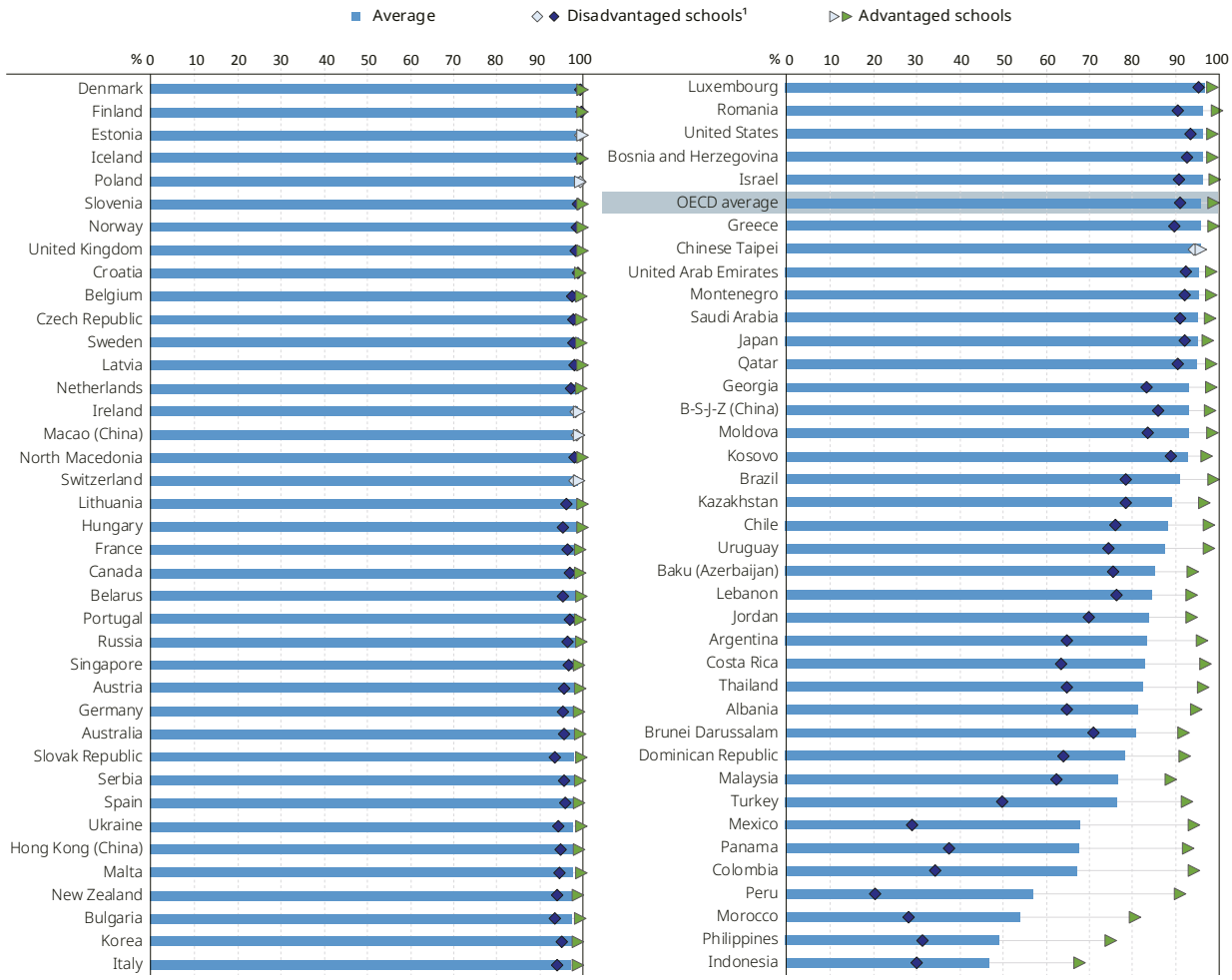
Preparedness of teachers and schools

The other part of the equation is, of course, how well educational institutions are equipped and accustomed to online learning, and how well teachers are prepared and engaged in online learning.

Even where online education does not directly rely on

Figure 3 • Access to a link to the internet

Percentage of students that have access to a link to the internet, PISA 2018



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Countries and economies are ranked in descending order of the average percentage of students that have access to a link to the internet.
Source: OECD, PISA 2018 Database

schools, the state of technology in schools provides some indication of the readiness of the education system. Moreover, the success of many students over the coming weeks and months will critically hinge on maintaining close relationships with their teachers. This is particularly true for students from disadvantaged backgrounds, who may not have the parental support or who lack the resilience, learning strategies or engagement to learn on their own. There should be no illusions about the impact that the combination of economic hardship and school closures could have on the poorest children. The needs of these children will be front-of-mind for their teachers, which underlines the importance of keeping teachers closely engaged and connected with learners. There is one further consideration: The PISA 2018 assessment revealed that even among 15-year-old students, on average across OECD countries, just one in 9 students was able to distinguish between fact and opinion, based on implicit cues pertaining to the content or source of the information. Thus, without considerable guidance and support from teachers, it is unlikely that students will be able navigate the world of online learning on their own.

Availability of technology

For a start, on average across OECD countries, there is almost one computer available at school for every 15-year old student for educational purposes (the computer-student ratio is equal to 0.8). In Austria, Iceland, Luxembourg, Macao (China), New Zealand, the United Kingdom and the United States, the computer-student ratio is 1.25 or more, while in Albania, Brazil, Greece, Kosovo, Montenegro,

Morocco, Turkey and Viet Nam, there is only one computer available for every 4 students (ratio = 0.25) or less.

In most countries, the distribution of computers in schools tends to be more equitable than at home. In fact, in 16 countries and economies, the computer-student ratio is greater in disadvantaged schools than in advantaged schools. In 17 countries and economies, the number of computers available per student is greater in advantaged schools than in disadvantaged schools.

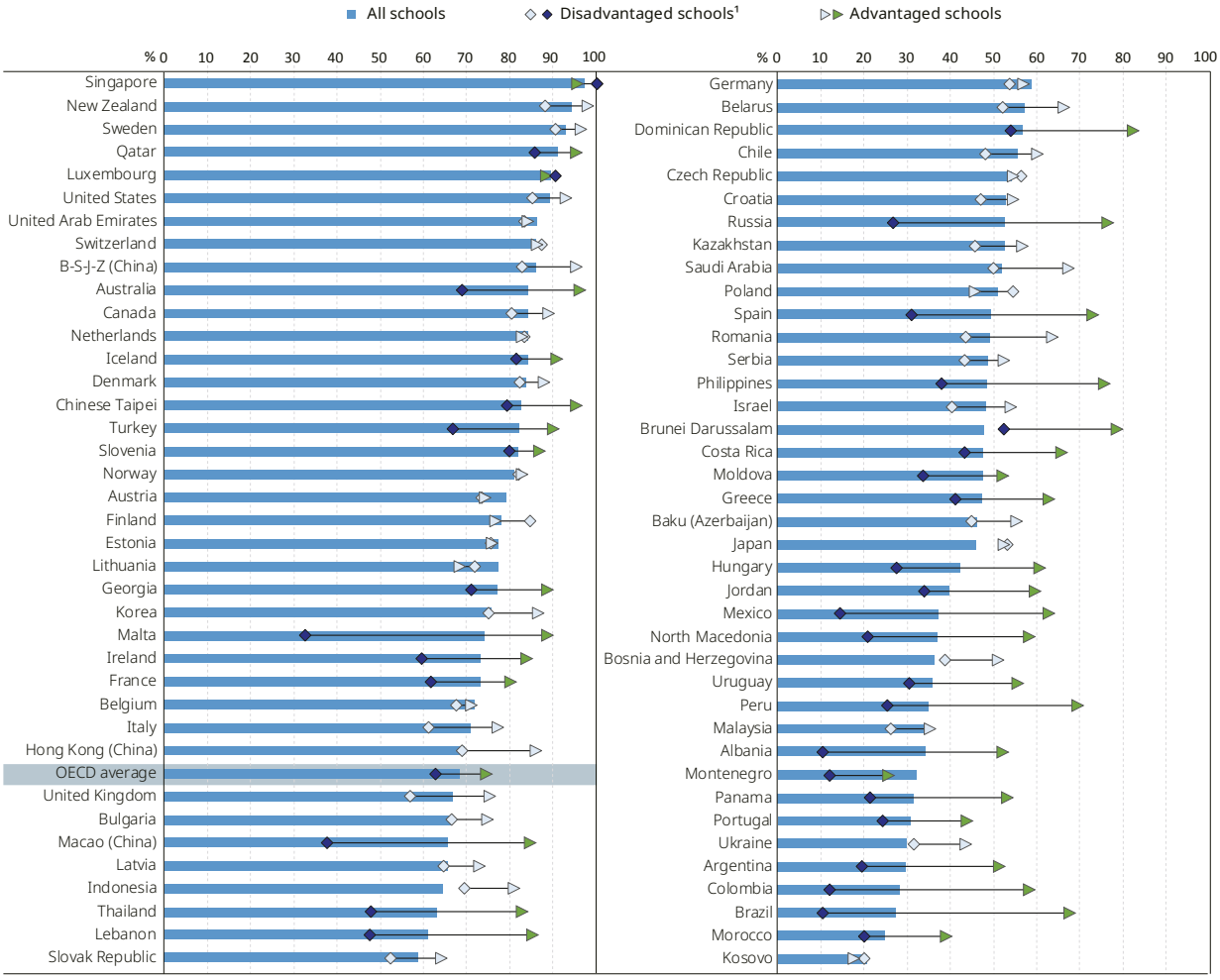
There has been notable progress in equipping schools with computers, with a widespread increase in the computer-student ratio between 2009 and 2018. The largest increases in the average number of computers per 15-year-old student were observed in Estonia, Iceland, Lithuania, Luxembourg, Sweden, the United Kingdom and the United States. On average across OECD countries, there was one additional computer available per every four students in 2018 than was available in 2009 (0.26 of an additional computer per student).

Adequacy of technology

The existence of devices does not say much about their adequacy. In PISA, little more than two-thirds of 15-year-old students are enrolled in schools whose principal reported that the digital devices at school are sufficiently powerful in terms of computing capacity, in Japan it is less than half, and in Kosovo just one in five (Figure 4). Also here the data show large gaps between socio-economic groups.

Figure 4 • Digital devices at the school are sufficiently powerful in terms of computing capacity

Percentage of students in schools whose principal agreed or strongly agreed that the digital devices at the school are sufficiently powerful in terms of computing capacity, PISA 2018



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Countries and economies are ranked in descending order of the percentage of the sufficiently powerful digital devices at the school in terms of computing capacity, in all schools.
Source: OECD, PISA 2018 Database

Equally important, while in the four Chinese provinces taking part in PISA (Beijing, Jiangsu, Shanghai and Zhejiang), Lithuania, Singapore, Slovenia and Denmark 9 out of 10 students are in schools whose school principal reported that their school's internet bandwidth or speed is sufficient, this is only the case for 6 out of 10 school principals on average across OECD countries and for less than a third in Uruguay, Brunei Darussalam, Portugal, Mexico, Germany, the Republic of North Macedonia, Argentina, Colombia, Panama, Morocco, Brazil, Peru and Kosovo (Figure 5).

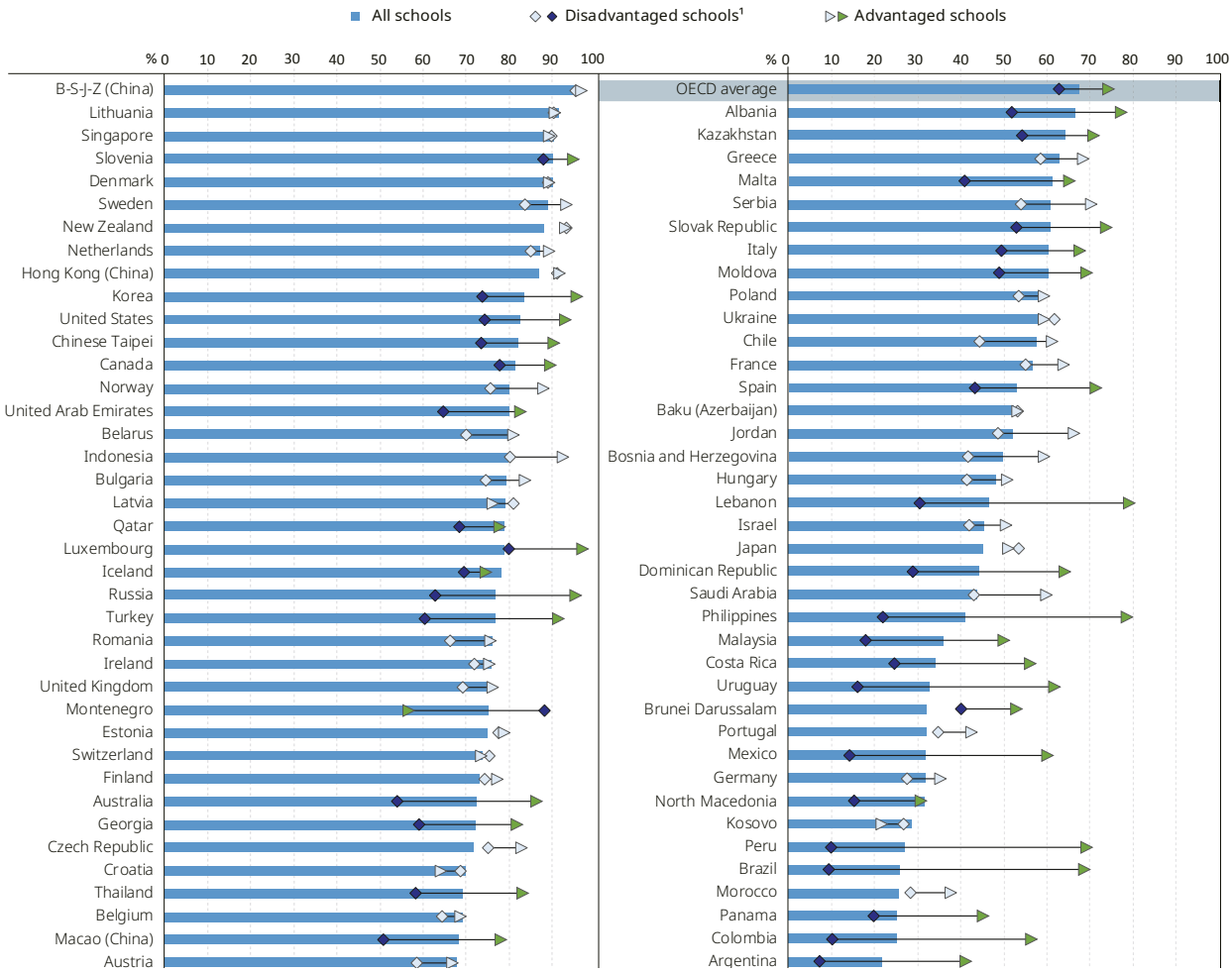
The picture is similar when it comes to the adequacy of Software. Even in a technologically advanced country such as Japan only 40% of 15-year-old students are enrolled in schools whose principal reports that there is sufficient availability of adequate software (Figure 6).

It is noteworthy that students attending schools with more computers per student scored lower in the PISA assessment than their peers in schools with fewer computers per student. On average across OECD countries, one additional computer per student in a school was associated with a 12-point decline in reading scores before accounting for other factors, and with a 6-point decline after accounting for students' and schools' socio-economic profile. While this negative association between computers-per-student and students' scores may have many reasons, it does suggest that it takes more than providing technology to reap benefits in terms of better learning. This is a warning signal at a time when online learning becomes the only option.

Fixed work stations at school will not be of much help when students need to learn at home. In this sense, it

Figure 5 • Sufficient Internet bandwidth or speed

Percentage of students in schools whose principal agreed or strongly agreed that the school's Internet bandwidth or speed is sufficient, PISA 2018



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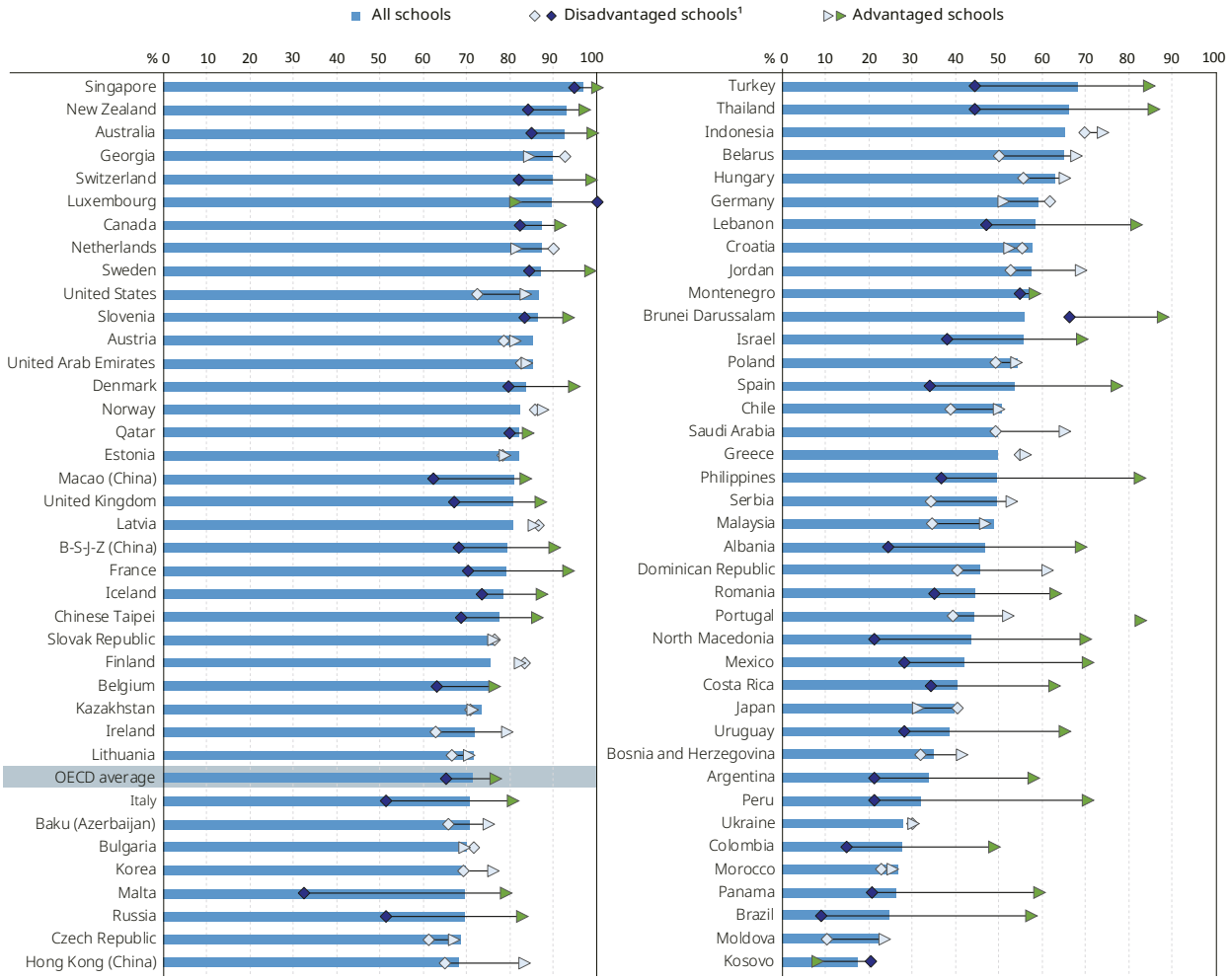
Countries and economies are ranked in descending order of the percentage of sufficient school's Internet bandwidth or speed in all schools.
Source: OECD, PISA 2018 Database

Figure 6 • Sufficient availability of adequate software

Percentage of students in schools whose principal agreed or strongly agreed that the availability of adequate software is sufficient, PISA 2018



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Countries and economies are ranked in descending order of the percentage of the sufficient availability of adequate software, in all schools.
Source: OECD, PISA 2018 Database

is encouraging that 40% of all computers available to 15-year-olds in school are portable. In a few high-income countries, most computers available at school are portable: in Denmark, Norway, Singapore and Sweden, 9 out of 10 computers are portable and in the United States, 8 out of 10 computers are portable. By contrast, in 50 countries and economies, only 30%, at most, of all computers available at school are portable. In Cyprus, Georgia, Jordan, Malta, Morocco, the Philippines and Thailand, only 1 in 10 computers, at most, are portable.

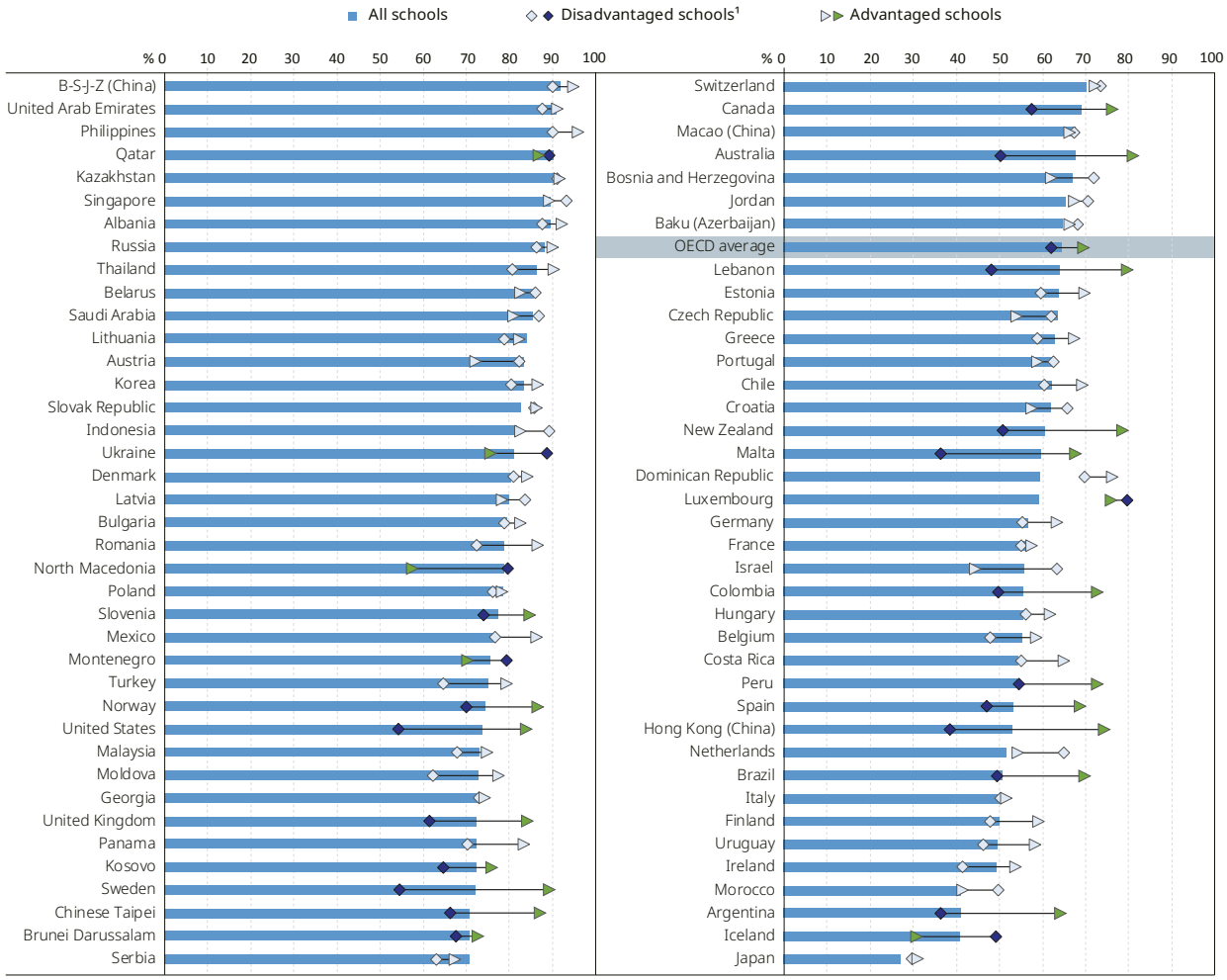
Portable computers are more frequently available in socio-economically advantaged than in disadvantaged schools, on average across OECD countries and in 21 education systems that participated in PISA 2018. Indeed, the growth in the availability of portable computers at school between 2015 and 2018 was due to gains amongst schools in the second, third and top quarters of the distribution of schools' socio-economic profile, while amongst disadvantaged schools, the share of portable computers did not change during the period. As a result, the disparity in access to portable computers related to socio-economic status increased between 2015 and 2018.

Use of technology and preparedness of teachers

Technology is only as good as its use. PISA 2018 asked school principals about different aspects of their school's capacity to enhance teaching and learning using digital devices. On average across OECD countries, 65% of 15-year-olds are enrolled in schools

Figure 7 • Teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction

Percentage of students in schools whose principal agreed or strongly agreed that teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction, PISA 2018



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Countries and economies are ranked in descending order of the percentage of schools where teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction.

Source: OECD, PISA 2018 Database

whose school principal considers that their teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction. This highlights the enormous training needs that lie ahead of education systems to get ready for educational technology. Again, this varies considerably between socio-economically advantaged and disadvantaged schools. In Sweden, for example, this is 89% in advantaged schools but just 54% in disadvantaged schools. These number signal that schools may reinforce rather than moderate the disadvantage that comes from individual home backgrounds (Figure 7).

On average across OECD countries, about 60% of 15-year-old students are enrolled in schools whose principals consider that teachers have sufficient time to prepare lessons integrating digital devices, ranging from close to 90% in the four Chinese provinces to little more than 10% in Japan (Figure 8). The picture is similar when it comes to the availability of effective professional resources for teachers to learn how to use the digital devices available (Figure 9). About 55% of students were in schools where teachers are provided with incentives to integrate digital devices into their teaching or have sufficiently qualified technical assistant staff (Figure 11).

Access to effective online learning platforms

What counts perhaps most in this crisis is access and availability of effective online platforms for learning. On average across OECD countries, just about half of 15-year-olds are enrolled in schools whose principal reported that an effective online learning support platform is available. Again, there is large

variation within and across countries. In Singapore, the four Chinese provinces and Macao (China) and Denmark, 9 out of 10 students are enrolled in schools that have an effective online learning support platform, whereas in Argentina, Costa Rica, Kosovo, Panama, Luxembourg, Japan, Peru, the Republic of North Macedonia, Belarus and Morocco it is less than 30% (Figure 12).

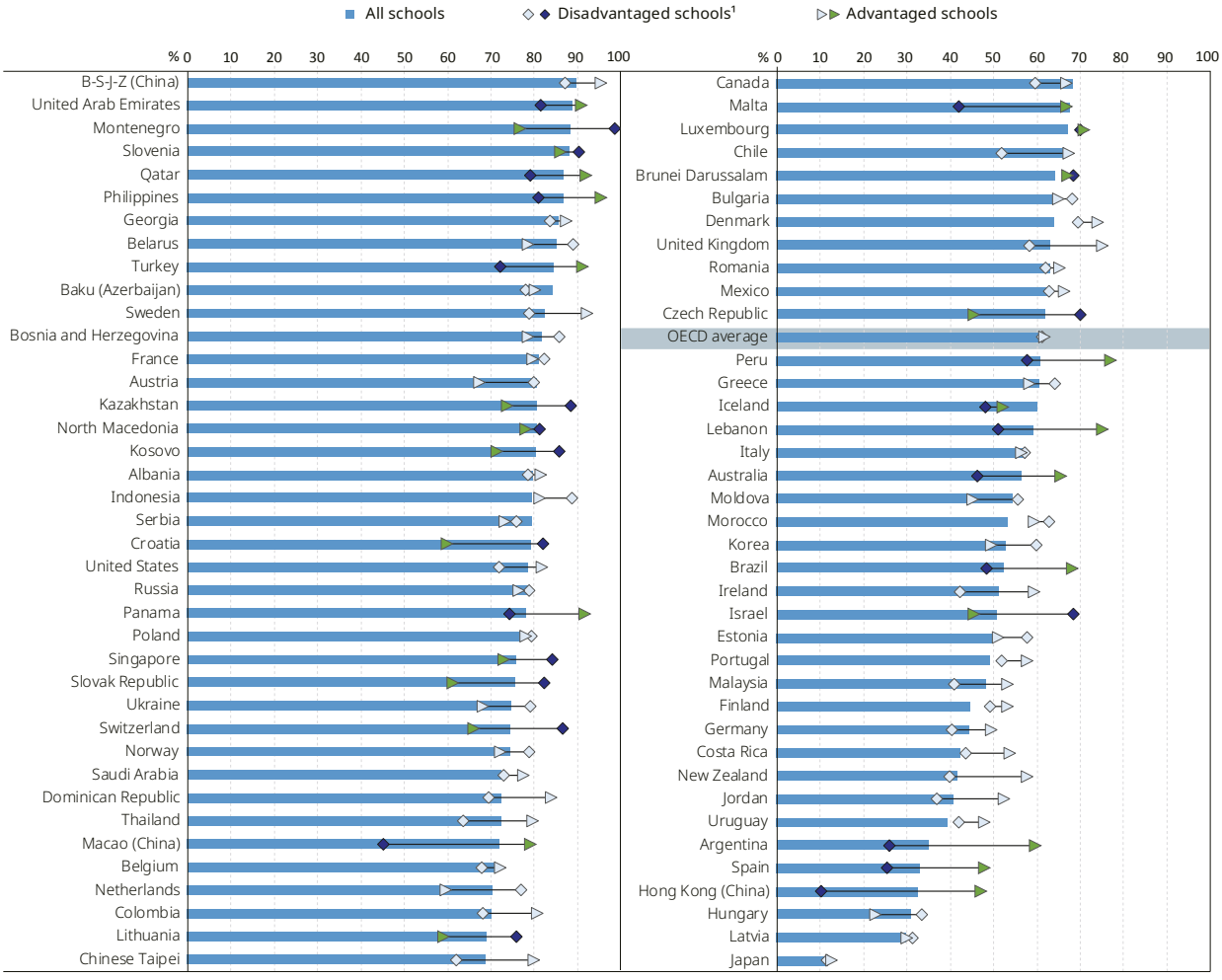
Students attending schools with a greater capacity to enhance teaching and learning using digital devices scored higher in PISA, on average across OECD countries. For example, students in schools whose principal reported that the school's Internet bandwidth or speed is sufficient scored 10 score points higher in reading, on average across OECD countries, while students in schools where teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction scored 5 points higher. However, after accounting for students' and schools' socio-economic profile, differences in reading scores turned out to be not statistically significant for 10 out of the 11 indicators calculated, on average across OECD countries.

School practices for using digital devices effectively

Using digital devices and ICT effectively, to enhance teaching and learning, may also depend on schools' policies and practices. PISA 2018 asked school principals whether they had formal guidelines (e.g.

Figure 8 • . Teachers have sufficient time to prepare lessons integrating digital devices

Percentage of students in schools whose principal agreed or strongly agreed that teachers have sufficient time to prepare lessons integrating digital devices, PISA 2018



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Countries and economies are ranked in descending order of the percentage of schools where teachers have sufficient time to prepare lessons integrating digital devices.
Source: OECD, PISA 2018 Database

written statements, programmes or policies) or specific practices (e.g. regularly scheduled meetings) that focus on how to use digital devices effectively in the classroom.

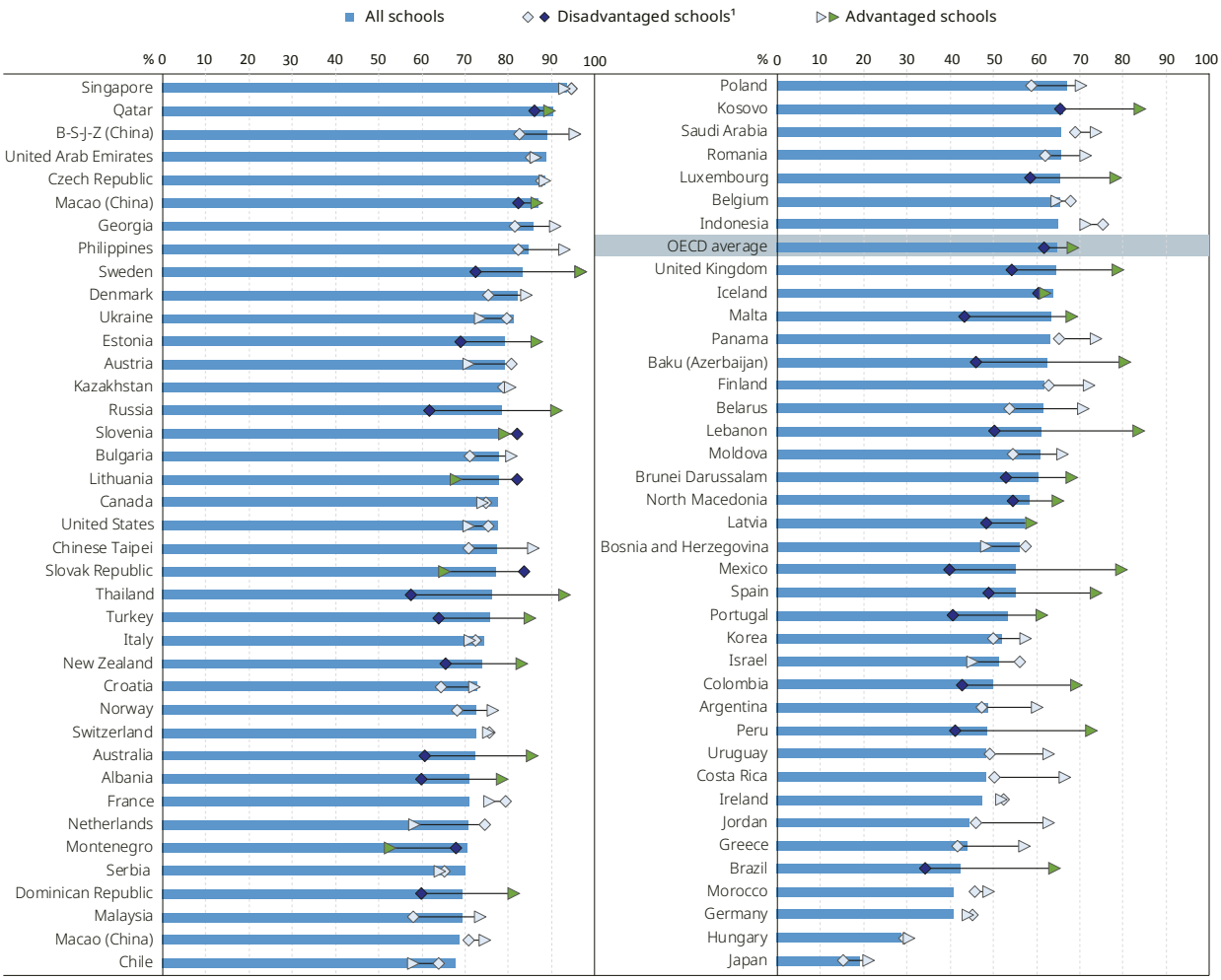
On average across OECD countries, the most common school practices intended to improve learning through the use of digital devices were: having regular discussions between principals and teachers about the use of digital devices for pedagogical purposes (63% of students attended schools that practice this); having written school statements about the use of digital devices (62% of students); and having a specific programme to prepare students for responsible Internet behaviour (60% of students).

By contrast, on average across OECD countries, the least common practices were: having a specific programme to promote collaboration amongst teachers on the use of digital devices (36% of students attended schools that have such a programme); having a scheduled time for teachers to meet to share, evaluate or develop instructional materials and approaches that use digital devices (44% of students); and having a written statement specifically about the use of digital devices for pedagogical purposes at school (46% of students).

School guidelines and practices to enhance teaching and learning using digital devices are more often observed in socio-economically advantaged schools than disadvantaged schools.

Figure 9 • Effective professional resources for teachers to learn how to use digital devices are available

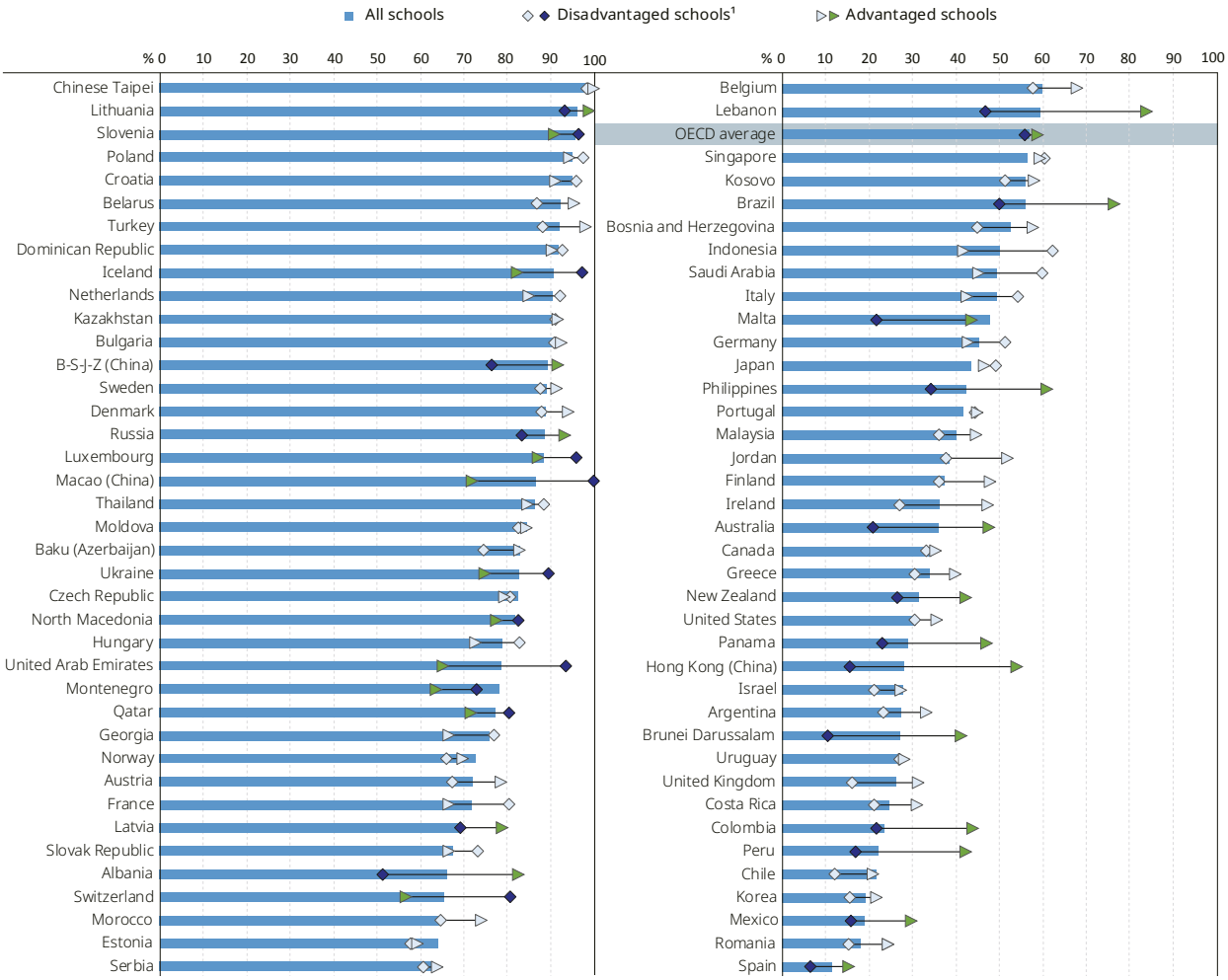
Percentage of students in schools whose principal agreed or strongly agreed that effective professional resources for teachers to learn how to use digital devices are available, PISA 2018



Note: 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 effective professional resources for teachers to learn how to use digital devices are available
Source: OECD, PISA 2018 Database

Figure 10 • Teachers are provided with incentives to integrate digital devices in their teaching

Percentage of students in schools whose principal agreed or strongly agreed that teachers are provided with incentives to integrate digital devices in their teaching, PISA 2018



Note: Statistically significant values are shown in darker tones.

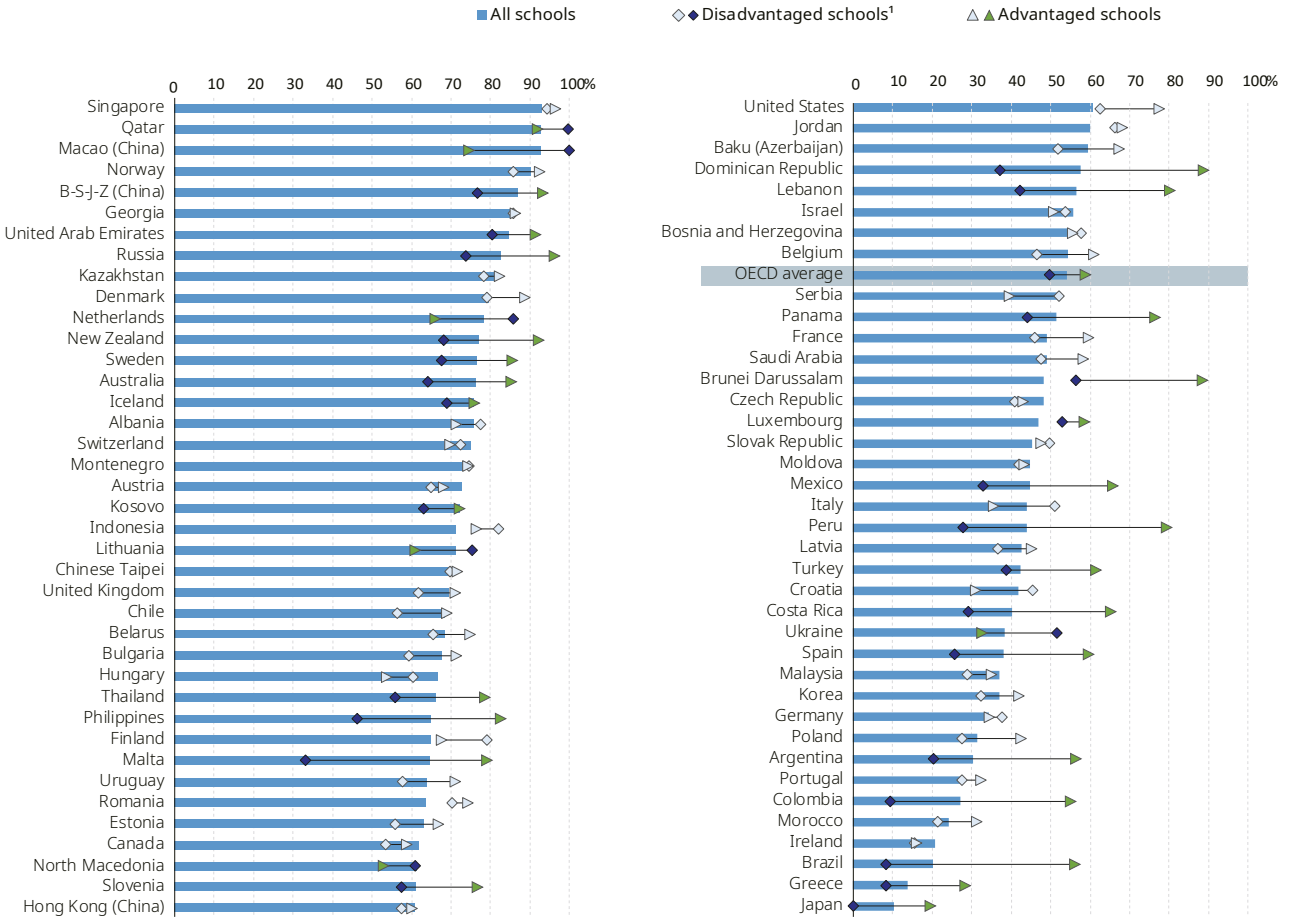
1. A socio-economically disadvantaged (advantaged) school is a school whose socio-economic profile (i.e. the average socio-economic status of the students in the school) is in the bottom (top) quarter of the PISA index of economic, social and cultural status amongst all schools in the relevant country/economy.

Countries and economies are ranked in descending order of the percentage of schools where teachers are provided with incentives to integrate digital devices in their teaching

Source: OECD, PISA 2018 Database

Figure 11 • The school has sufficient qualified technical assistant staff

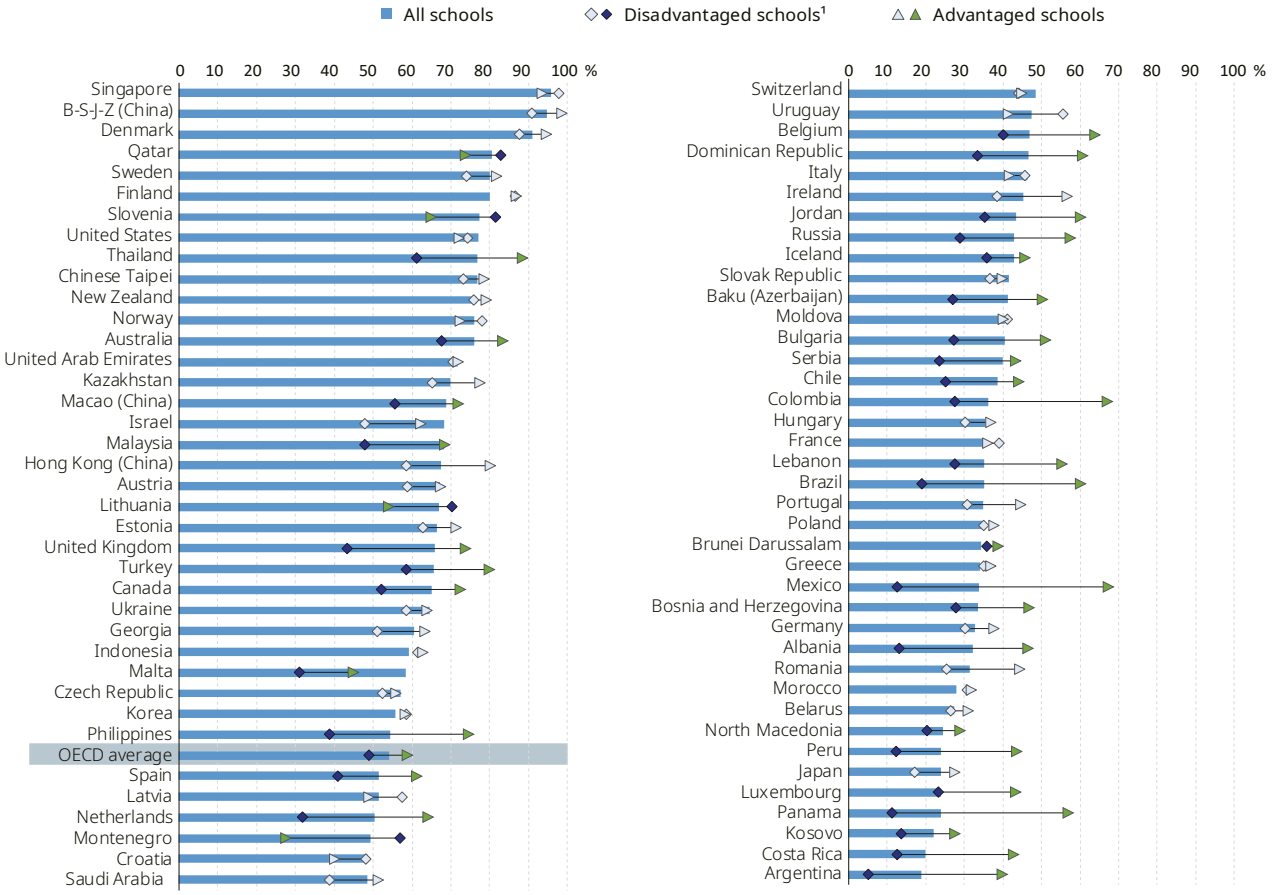
Percentage of students in schools whose principal agreed or strongly agreed that the school has sufficient qualified technical assistant staff, PISA 2018



Note: 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 that have sufficient qualified technical assistant staff
Source: OECD, PISA 2018 Database

Figure 12 • 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, PISA 2018



Note: 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

Appendix A. Survey

Framework for Rapid Response to COVID-19

The Global Education Innovation Initiative at the Harvard Graduate School of Education and the Directorate of Education and Skills of the OECD are collaborating in the development of a decision-support framework to support governments in devising education responses to the COVID-19 Pandemic.

This rapid response framework will be based on an analysis of current global needs and practices to support the education of students at the basic levels during the Pandemic. The framework will also highlight innovative practices in the response to the Pandemic.

We hope that the information in this rapid assessment of needs and responses will assist education policy makers, other educators and other organizations in civil society in strengthening the education response to the Pandemic in the coming weeks. The report with the results will be provided to all respondents and will be widely disseminated among the education community. No individual respondent will be identified by name. Participation in this survey is entirely optional. If you begin the survey, you can suspend participation at any time and not submit your responses. If you complete and submit the survey you are consenting to the use of the information you provide for the purposes described here.

If you are able to provide information on how a particular government entity, or network of schools, is responding to the Pandemic, or if you are able to describe the needs for information that such entities have, please fill out this survey by March 24.

Please do not fill out the survey if you do not believe you have accurate information on the questions included in the survey.

Do not guess in providing answers, if you don't know the answer to a question just don't respond.

https://harvard.az1.qualtrics.com/jfe/form/SV_3f4XNi1b6uePs7X

Many thanks for your participation in this survey.

Andreas Schleicher

OECD,

Education and Skills Directorate

Fernando Reimers

Global Education Innovation Initiative,

Harvard Graduate School of Education

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1. What level of government is the reference for the responses you provide in this survey
   a. National ministry of education
   b. State ministry of education
   c. Municipal ministry of education
   d. Network of schools (public)
   e. Network of schools (private)
   f. Other (specify)
2. What is the country to which the responses provided in this survey refer to?
   a. Select country
3. Has the operation of schools been suspended in the country and level of government you are describing in this survey at this point?
   a. Yes, the government has mandated the suspension of school activities

b. The government has not yet mandated the suspension of school activities, but it is likely to do so over the next few weeks.

c. Schools have discretion over whether to suspend classes

4. If classes have been suspended, or are likely to be suspended, what is the length of the suspension of classes at this point?

Identifying Needs

5. How critical is it that the level of government you are describing makes decisions about the following, in the response to the COVID-19 Pandemic (likert scale)

a. Ensure the continuity of the academic learning of students
b. Ensure support for parents and caregivers to support student learning.
c. Ensure continuity/integrity of the assessment of student learning
d. Revise graduation/grade transition policy to allow student progress.
e. Ensure distribution of food to students
f. Ensure provision of other social services to students
g. Ensure well-being of students
h. Ensure medical attention of students affected by COVID-19
i. Provide professional support, advice to teachers
j. Ensure well-being of teachers
k. Ensure medical attention to teachers affected by COVID-19
l. Other, specify

6. Which of these are the most challenging issues to address, in the response to the COVID-19 Pandemic (likert scale)

a. Ensure the continuity of the academic learning of students
b. Ensure support for parents and caregivers to support student learning.
c. Ensure continuity/integrity of the assessment of student learning
d. Revise graduation/grade transition policy to allow student progress.
e. Ensure distribution of food to students
f. Ensure provision of other social services to students
g. Ensure well-being of students
h. Ensure medical attention of students affected by COVID-19
i. Provide professional support, advice to teachers
j. Ensure well-being of teachers
k. Ensure medical attention to teachers affected by COVID-19
l. Other, specify

Characterizing responses

7. What has the government/network you are describing here done to support the continuity of the academic experience of students?

8. What instructional resources have you been able to use to support the academic experience of students while they are unable to come to school?

a. Online websites, please provide website
b. Printed Instructional packages, please describe
c. Radio education, please describe
d. Educational television, please describe
e. Using existing online distance learning platform/resources, please describe

f. Develop new online platforms (virtual classrooms) so that teachers can continue engaged with students or students engage in self-directed or collaborative learning

g. Partner with private education platforms

h. Other modalities, please describe

9. What specific actions are in place to support the education of students from disadvantaged backgrounds during the time when school operations are suspended?

10. What actions have been undertaken to continue distribution of students who receive meals in schools during the Pandemic?

11. What actions have been undertaken to provide other social services to students during the pandemic?

12. What actions have been undertaken to support the well-being of students during the pandemic?

13. What professional support/advice is being offered to teachers during the pandemic?

14. What actions have been undertaken to support the well-being of teachers during the pandemic?

15. What resources have you been able to use to support the professional development of teachers and their capacity to innovate during the Pandemic?

a. Online websites, please provide website

b. Printed Instructional packages, please describe

c. Radio education, please describe

d. Educational television, please describe

e. Using existing online distance learning platform/resources, please describe

f. Develop new online platforms (virtual classrooms) so that teachers can access professional development and engage in self-directed or collaborative learning with peers

g. Partner with private education platforms

h. Tools that enable teachers to share knowledge with other teachers in the same country

i. Tools that enable teachers to collaborate with peers in other countries

j. Other modalities, please describe

.16. What actions have been undertaken to support parents to help learning and well-being of students at home?

17. Are there other actions which have been undertaken that aim at supporting the education of students during the pandemic?

18. What are the implementation challenges with the responses which have been adopted so far?

a. Lack of technological infrastructure

b. Management of IT infrastructure

c. Achieving the right balance between digital and screen-free activities

d. Addressing students emotional health

e. Lack of capacity or willingness of teachers to adapt to the changes required by the situation.

f. Lack of availability of parents/guardians to support learning at home.

g. Lack of adequate communication with parents to coordinate curriculum-aligned learning

h. Other, specify

19. Are there any positive unexpected educational actions or results of the changes which responding to the Pandemic has made necessary?

a. introduction of technologies and other innovative solutions

b. increased pedagogical autonomy of teachers

c. introduction/reinforcement of learning on global and citizenship issues (global health issue, interconnectedness of the world, sense of cizitenship and responsibility etc)

d. strengthened involvement and cooperation of parents

e. increased autonomy of students to manage their own learning

f. improvement in multi-sectorial coordination (Education-health etc)

g. strengthened public-private partnership

20. Is there anything else you would like to add?

21. Can you provide an email address where we can contact you, if necessary?

22. What is your role in the education system?

23. What is the source of the information you provide in this survey?

a. From my direct involvement in a school
b. From my direct involvement in a network of schools
c. From my direct involvement in the government
d. From my direct involvement in the private sector in education
e. Other, specify

Appendix B. Online platforms and education resources identified by respondents of the survey.

We are including these resources without checking them or evaluating them in any way. We do not have information on the quality or representativeness of these resources.

Online platforms:

Google, Google classroom, Google suite, Google Hangout, Google Meet

Facebook

Microsoft one note

Microsoft, SEQTA, education Perfect

Google Drive/Microsoft Teams

Moodle

Zoom

Seesaw

ManageBac

Ed Dojo

EdModo

https://mediawijs.be/tools

Youtube

youtube, ebscohost, progrentis

PhET

Screencastify

RAZ Kids

IXL

Web-sites

https://learning.careyinstitute.org/; https://www.learninginpractice.org/moving-learning-online?preview=true

https://eduthek.at/schulmaterialien

e-education.brac.net

www.techedu.gov.bd

https://www.klascement.net/thema/geen-les-op-school

Www.mon.bg

https://play.google.com/store/apps/details?id=secondary.academy.miya&hl=en

educarchile.cl

learnenglishbritishcouncil,

https://educationaboveall.org/#!/news/eaa-provides-home-learning-support-for-parents-and-guardians

https://hundred.org/en/articles/a-guide-for-caring-for-children-during-extended-family-confinement; https://www.jenniferchangwathall.com/resources

https://www.mckinsey.com/business-functions/organization/our-insights/leadership-in-a-crisis-responding-to-the-coronavirus-outbreak-and-future-challenges?cid=other-eml-alt-mip-mck&hlkid=c253534b9ada4e3da6593104054fe111&hctky=9652078&hdpid=16a43b5b-480b-4b3b-b8cf-bc20fcc11b08#

https://www.cois.org/about-cis/perspectives-blog/blog-post/~board/perspectives-blog/post/managing-ambiguity-a-competency-to-harness-now-and-for-the-future

http://1s1k.eduyun.cn/

www.alianzaeducativa.edu.co

https://micuentofantastico.cr/recursos/; : https://micuentofantastico.cr/coleccion-fantastica/

https://cajadeherramientas.mep.go.cr/

https://nadalku.msmt.cz/cs

www.televisioneducativa.gob.mx

https://www.esl-lab.com/

Hitsa.ee

https://www.hm.ee/et/koroonaviiruse-leviku-tokestamine-info-haridusasutustelehttps://www.hitsa.ee/e-ope-korduma-kippuvad-kusimusedhttps://www.facebook.com/groups/278900333094971/?ref=group_header â€¢ https://www.innove.ee/uudis/info-ja-nouanded-vanematele-oma-lapse-toetamiseks-COVID-19-pandeemia-ajal/

https://www.hitsa.ee/e-ope-korduma-kippuvad-kusimused

www.innove.ee www.hm.ee www.hitsa.ee

https://minedu.fi/koronavirus-ja-varautuminen,

www.continuitepedagogique.org

http://solidarite.edtechfrance.fr/

http://pronote.0640055m.ac-bordeaux.fr/pronote/professeur.html?login=true

www.jobsandinternshipsabroad.com

unterricht.de;

simpleclub.de

TV5MONDE
Wikipedia.org
www.galileo.edu.gt/ges
https://www.nkp.hu/
https://www.oktatas.hu/kozneveles/ajanlas_tantermen_kivuli_digitalis_munkarendhez/
https://fraedslugatt.is/
https://krakkaruv.spilari.ruv.is/
Centralswayam.gov.in
https://mhrd.gov.in/e-contents
https://seshagun.gov.in/shagun
https://swayam.gov.in/about
www.educate.ie
www.educateplus.ie
scoilnet.ie
ncca.ie
jct.ie
pdst.ie
education.gov.il
https://pop.education.gov.il/sherutey-tiksuv-bachinuch/
https://dolly.economia.unimore.it/2019/
https://www.riconnessioni.it/galleria/
https://www.mext.go.jp/edutainment/
https://www.nhk.or.jp/school/
https://katariba.online/
http://www.kumamoto-kmm.ed.jp/
https://www.mext.go.jp/a_menu/ikusei/gakusyushien/index_00001.htm
https://www.mext.go.jp/content/20200319-mxt_kouhou02-000004520_1.pdf METI on-line learning support website;
https://www.learning-innovation.go.jp/COVID_19/
Www.welovereading.org
https://darsak.gov.jo/
http://tiny.cc/LearningintheTimeofCorona
https://docs.google.com/document/d/1wB8a2Hz5olGI7Rks0GB3BHHmEAZ9TYyUZelTRMhfFoM/mobilebasic
www.MakeMusic.com
www.brainpop.com
Raz Kids
iXL
Mystery Science
In Thinking
www.kognity.com
www.scirra.com
Explore Learning/Gizmos
EBSCO
World Book Online
www.follett.com
https://soma.lv
https://maconis.zvaigzne.lv
https://www.uzdevumi.lv
https://www.zvaigzne.lv/
https://www.fizmix.lv
https://www.nsa.smm.lt/
https://sites.google.com/itc.smm.lt/nuotolinis/naujienos
https://www.smm.lt/web/lt/nuotolinis
www.aprende.edu.mx
www.telesecundaria.sep.gob.mx
www.librosdetexto.sep.gob.mx
https://www.gob.mx/conaliteg
https://docs.google.com/spreadsheets/d/1SA1N1fQkrPkkoTNKXOwm90g7kBZD6BBCN94i0HFlG2c/edit#gid=538165332
http://sep.puebla.gob.mx/index.php/component/k2/content/estudiantes
www.knotion.com
www.udir.no
http://aaghi.aiou.edu.pk/
Ucas-edu.workplace.com
https://www.fractalup.com
Readtheory.org
noredink.com
Google classroom
Edmodo
Khan Academy
Quizlet
http://www.gov.pl/zdalnelekcje
https://epodreczniki.pl/
Genial.ly
eduelo.pl
epodreczniki.pl
testportal.pl
superkid.pl
HSLDA
https://apoioescolas.dge.mec.pt/
www.scoalapenet.ro
www.sio.si
www.zrss.si
https://sites.google.com/sparkschools.co.za/home-

learning/home

www.ebs.co.kr

www.edunet.net

campustrilema.org

https://coronavirus.uib.eu/

https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/educacion/Paginas/2020/170320suspension-clases.aspx

https://intef.es/Noticias/medidas-COVID-19-recursos-para-el-aprendizaje-en-linea/

https://intef.es/recursos-educativos/recursos-para-el-aprendizaje-en-linea/

http://blogs.escolacristiana.org/formacio/escola-cristiana-en-xarxa/?utm_campaign=escola-cristiana-en-xarxa&utm_medium=email&utm_source=acumbamail; https://intef.es/recursos-educativos/recursos-para-el-aprendizaje-en-linea/recursos/profes-en-casa/

www.skolverket.se

www.lesopafstand.nl

www.quarantainecolleges.nl

https://communities.surf.nl/group/59

https://support.google.com/edu/classroom

www.eba.gov.tr

https://portal.nesibeaydin.com.tr

https://www.learn.khanacademy.org,

http://science.cleapss.org.uk/

Learning A to Z, BrainPop

Albert.io

Newsela

biblegateway

Rediker

Plus Portals LMS, GAFE, EduBlogs, Kahoot, Nearpod, WeVideo, FlipGrid, EdPuzzle, GMeet, Zoom, Adobe for Education, various museums and fine arts sites

Annenberg

www.rea.ceibal.edu.uy

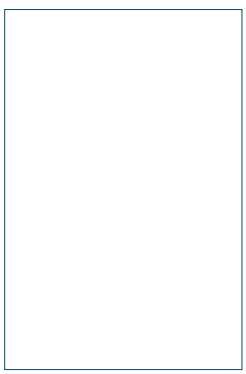
www.toolsofthemind.org

Audible

Cambridge resources

Managebac

Seesaw



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