

Fernando M. Reimers *Editor*

# Primary and Secondary Education During Covid-19

Disruptions to Educational Opportunity  
During a Pandemic

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During a Pandemic

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*Editor*

Fernando M. Reimers   
Harvard Graduate School of Education  
Harvard University  
Cambridge, MA, USA



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# Chapter 1

## Learning from a Pandemic. The Impact of COVID-19 on Education Around the World



Fernando M. Reimers

**Abstract** This introductory chapter sets the stage for the book, explaining the goals, methods, and significance of the comparative study. The chapter situates the theoretical significance of the study with respect to research on education and inequality, and argues that the rare, rapid, and massive change in the social context of schools caused by the pandemic provides a singular opportunity to study the relative autonomy of educational institutions from larger social structures implicated in the reproduction of inequality. The chapter provides a conceptual educational model to examine the impact of COVID-19 on educational opportunity. The chapter describes the evolution of the COVID-19 pandemic and how it resulted into school closures and in the rapid deployment of strategies of remote education. It examines available evidence on the duration of school closures, the implementation of remote education strategies, and known results in student access, engagement, learning, and well-being.

### 1.1 Introduction

The COVID-19 pandemic shocked education systems in most countries around the world, constraining educational opportunities for many students at all levels and in most countries, especially for poor students, those otherwise marginalized, and for students with disabilities. This impact resulted from the direct health toll of the pandemic and from indirect ripple effects such as diminished family income, food insecurity, increased domestic violence, and other community and societal effects. The disruptions caused by the pandemic affected more than 1.7 billion learners, including 99% of students in low and lower-middle income countries (OECD, 2020c; United Nations, 2020, p. 2).

While just around 2% of the world population (168 million people as of May 27, 2021) had been infected a year after the coronavirus was first detected in Wuhan, China, and only 2% of those infected (3.5 million) had lost their lives to the virus (World Health Organization, 2021a), considerably more people were impacted by

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F. M. Reimers (✉)  
Harvard Graduate School of Education, Harvard University, Cambridge, MA, USA  
e-mail: [fernando\\_reimers@harvard.edu](mailto:fernando_reimers@harvard.edu)

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the policy responses put in place to contain the spread of the virus. Beyond the infections and fatalities reported as directly caused by COVID-19, analysis of the excess mortality since the pandemic outbreak, suggests that an additional 3 million people may have lost their lives to date because of the virus (WHO, 2021b).

As the General Director of the World Health Organization declared the outbreak of COVID-19 a Public Health Emergency of International Concern (PHEIC) on January 30, 2020 (WHO, 2020a), countries began to adopt a range of policy responses to contain the spread of the virus. The adoption of containment practices accelerated as the COVID-19 outbreak was declared a global pandemic on March 11, 2020 (WHO, 2020b).

Chief among those policy responses were the social distancing measures which reduced the ability of many people to work, closed businesses, and reduced the ability to congregate and meet for a variety of purposes, including teaching and learning. The interruption of in-person instruction in schools and universities limited opportunities for students to learn, causing disengagement from schools and, in some cases, school dropouts. While most schools put in place alternative ways to continue schooling during the period when in-person instruction was not feasible, those arrangements varied in their effectiveness, and reached students in different social circumstances with varied degrees of success.

In addition to the learning loss and disengagement with learning caused by the interruption of in-person instruction and by the variable efficacy of alternative forms of education, other direct and indirect impacts of the pandemic diminished the ability of families to support children and youth in their education. For students, as well as for teachers and school staff, these included the economic shocks experienced by families, in some cases leading to food insecurity, and in many more causing stress and anxiety and impacting mental health. Opportunity to learn was also diminished by the shocks and trauma experienced by those with a close relative infected by the virus, and by the constraints on learning resulting from students having to learn at home, and from teachers having to teach from home, where the demands of schoolwork had to be negotiated with other family necessities, often sharing limited space and, for those fortunate to have it, access to connectivity and digital devices. Furthermore, the prolonged stress caused by the uncertainty over the evolution and conclusion of the pandemic and resulting from the knowledge that anyone could be infected and potentially lose their lives, created a traumatic context for many that undermined the necessary focus and dedication to schoolwork. These individual effects were reinforced by community effects, particularly for students and teachers living in communities where the multifaceted negative impacts resulting from the pandemic were pervasive.

Beyond these individual and community effects of the pandemic on students, and on teachers and school staff, the pandemic also impacted education systems and schools. Burdened with multiple new demands for which they were unprepared, and in many cases inadequately resourced, the capacity of education leaders and administrators, who were also experiencing the previously described stressors faced by students and teachers, was stretched considerably. Inevitably, the institutional bandwidth to attend to the routine operations and support of schools was diminished

and, as a result, the ability to manage and sustain education programs was hampered. Routine administrative efforts to support school operations as well as initiatives to improve them were affected, often setting these efforts back.

Published efforts to take stock of the educational impact of the pandemic to date, as it continues to unfold, have largely consisted of collecting and analyzing a limited number of indicators such as enrollment, school closures, or reports from various groups about the alternative arrangements put in place to sustain educational opportunity, including whether, when, and how schools were open for in-person instruction and what alternative arrangements were made to sustain education remotely. Often these data have been collected in samples of convenience, non-representative, further limiting the ability to obtain true estimates of the education impact of the pandemic on the student population. A recent review of research on learning loss during the pandemic identified only eight studies, all focusing on OECD countries which experienced relatively short periods of school closures (Belgium, the Netherlands, Switzerland, Spain, the United States, Australia, and Germany). These studies confirm learning loss in most cases and, in some, increases in educational inequality, but they also document heterogeneous effects of closures on learning for various school subjects and education levels (Donnelly & Patrinos, 2021).

There have also been predictions of the likely impact of the pandemic, consisting mostly of forecasts and simulations based on extrapolations of what is known about the interruption of instruction in other contexts and periods. For example, based on an analysis of the educational impact of the Ebola outbreaks, Hallgarten identified the following likely drivers of school dropouts during COVID-19: (1) the reduction in the availability of education services, (2) the reduction in access to education services, (3) the reduction in the utilization of schools, and (4) lack of quality education. Undergirding these drivers of dropout are these factors: (a) school closures, (b) lack of at-home educational materials, (c) fear of school return and emotional stress caused by the pandemic, (d) new financial hardships leading to difficulties paying fees, or to children taking up employment, (e) lack of reliable information on the evolution of the pandemic and on school reopenings, and (f) lack of teacher training during crisis. (Hallgarten, 2020, p. 3).

Another type of estimate of the likely educational cost of the pandemic includes forecasts of the future economic costs for individuals and for society. A simulation of the impact of a full year of learning loss estimated it as a 7.7% decline in discounted GDP (Hanushek & Woessman, 2020). The World Bank estimated the cost of the education disruption as a \$10 trillion dollars in lost earnings over time for the current generation of students (World Bank, 2020).

Many of the reports to date of the educational responses to the pandemic and their results are in fact reports of intended policy responses, often reflecting the views of the highest education authorities in a country, a view somewhat removed from the day-to-day realities of teachers and students and that provides information about policy intent rather than on the implementation and actual effect of those policies. For instance, the Inter-American Development Bank conducted a survey of the strategies for education continuity adopted by 25 countries in Latin America and the Caribbean during the first phase of the crisis, concluding that most had relied on the provision

of digital content on web-based portals, along with the use of TV, radio, and printed materials, and that very few had integrated learning management systems, and only one country had kept schools open (Alvarez et al., 2020).

These reports, valuable as they are, are limited in what they contribute to understanding the ways in which education systems, teachers, and students were impacted by the pandemic and about how they responded, chiefly because it is challenging to document the impact of an unexpected education emergency in real time, and because it will take time to be able to ascertain the full short- and medium-term impact of this global education shock.

## 1.2 Goals and Significance of this Study

This book is a comparative effort to discern the short-term educational impact of the pandemic in a selected number of countries, reflecting varied levels of financial and institutional education resources, a variety of governance structures, varied levels of education performance, varied regions of the world, and countries of diverse levels of economic development, income per capita, and social and economic inequality. Our goal is to contribute an evidence-based understanding of the short-term educational impact of the pandemic on students, teachers, and systems in those countries, and to discuss the likely immediate effects of such an impact. Drawing on thirteen national case studies, a chapter presenting a comparative perspective in five OECD countries and another offering a global comparative perspective, we examine how the pandemic impacted education systems and educational opportunity for students. Such systematic stock-taking of how the pandemic impacted education is important for several reasons. The first is that an understanding of the full global educational impact of the pandemic necessitates an understanding of the ways in which varied education systems responded (such as the nature and duration of school closures, alternative means of education delivery deployed, and the goals of those strategies of education continuity during the pandemic) and of the short-term results of those responses (in terms of school attendance, engagement, learning and well-being for different groups of students). In order to understand the possible student losses in knowledge and skills, or in educational attainment that the current cohort of students will experience relative to previous or future cohorts, and to understand the consequences of such losses, we must first understand the processes through which the pandemic influenced their opportunities to learn. Such systematization and stock-taking are also essential to plan for remediation and recovery, in the immediate aftermath of the pandemic and beyond. While the selection of countries was not intended to represent the entire world, the knowledge gained from the analysis of the educational impact of the pandemic on these diverse cases, as well as making visible what is not yet known, will likely have heuristic value to educators designing mitigation and remediation strategies in a wide variety of settings and may provide a useful framework to design further research on this topic.

In addition, the pandemic is likely to exacerbate preexisting challenges and to create new ones, increasing unemployment for instance or contributing to social fragmentation, which require education responses. Furthermore, there were numerous education challenges predating the pandemic that need attention. Addressing these new education imperatives, as well as tackling preexisting ones, requires ‘building back better’; not just restoring education systems to their pre-pandemic levels of functioning, but rather realigning them to these new challenges. Examining the short-term education response to the pandemic provides insight into whether the directionality of such change is aligned to ‘building back better’ and with the kind of priorities that should guide those efforts during the remainder of the pandemic and in the pandemic aftermath.

Lastly, the pandemic provides a rare opportunity to help us understand how education institutions relate to other institutions and to their external environment under conditions of rapid change. Much of what we know about the relationship of schools to their external environment is based on research carried out in much more stable contexts, where it is difficult to discern what is a cause and what is an effect. For instance, there is robust evidence that schools often reflect and contribute to reproducing social stratification, providing children from different social origins differential opportunities to learn, and resulting in children of poor parents receiving less and lower quality schooling than children of more affluent parents. It is also the case that educational attainment is a robust predictor of income. Increases in income inequality correlate with increases in education inequality, although government education policies have been shown to mitigate such a relationship (Mayer, 2010).

The idea that education policy can mitigate the structural relationship between education and income inequality suggests that the education system has certain autonomy from the larger social structure. But disentangling to what extent school policy and schools can just reproduce social structures or whether they can transform social relations is difficult because changes in education inequality and social inequality happen concurrently and slowly, which makes it difficult to establish what is cause and what is effect. However, a pandemic is a rare rapid shock to that external environment, the equivalent of a solar eclipse, and thus a singular opportunity to observe how schools and education systems respond when their external environment changes, quite literally, overnight. Such a shock will predictably have disproportionate impacts on the poor, via income and health effects, presenting a unique opportunity to examine whether education policies are enacted to mitigate the resulting disproportionate losses on educational opportunity from such income and health shocks for the poor and to what extent they are effective.

### **1.3 A Stylized Global Summary of the Facts**

A full understanding of the educational impact of the pandemic on systems, educators, and students will require an analysis of such impact in three time frames: the immediate impact, taking place while the pandemic is ongoing; the immediate

aftermath, as the epidemic comes under control, largely as a result of the population having achieved herd immunity after the majority has been inoculated; and the medium term aftermath, once education systems, societies, and economies return to some stability. Countries will differ in the timeline at which they transition through these three stages, as a function of the progression of the pandemic and success controlling it, as a result of public health measures and availability, distribution, and uptake of vaccines, and as a result of the possible emergence of new more virulent strands of the virus which could slow down the efforts to contain the spread. There are challenges involved in scaling up the production and distribution of vaccines, which result in considerable inequalities in vaccination rates among countries of different income levels. It is estimated that 11 billion doses of vaccines are required to achieve global herd immunity (over 70% of the population vaccinated). By May 24, 2021, a total of 1,545,967,545 vaccine doses had been administered (WHO, 2021a), but 75% of those vaccines have been distributed in only 10 high income countries (WHO, 2021c).

Of the 9.5 billion doses expected to be available by the end of 2021, 6 billion doses have already been purchased by high and upper middle-income countries, whereas low- and lower-income countries—where 80% of the world population lives—have only secured 2.6 billion, including the pledges to COVAX, an international development initiative to vaccinate 20% of the world population (Irwin, 2021). At this rate, it is estimated that it will take at least until the end of 2022 to vaccinate the lowest income population in the world (Irwin, 2021).

The educational impact of the pandemic in each of these timeframes will likely differ, as will the challenges that educators and administrators face in each case, with the result that the necessary policy responses will be different in each case. The immediate horizon—what could be described as the period of emergency—can in turn be further analyzed in various stages since, given the relatively long duration of the pandemic, spanning over a year, schools and systems were able to evolve their responses in tandem with the evolution of the epidemic and continued to educate to varying degrees as a result of various educational strategies of education continuity adopted during the pandemic. During the initial phase of this immediate impact, the responses were reactive, with very limited information on their success, and with considerable constraints in resources available to respond effectively. This initial phase of the emergency was then followed by more deliberate efforts to continue to educate, in some cases reopening schools—completely or in part—and by more coordinated and comprehensive actions to provide learning opportunities remotely. The majority of the analysis presented in this book focuses on this immediate horizon, spanning the twelve months between January of 2020, when the pandemic was beginning to extend beyond China, as the global outbreak was recognized on March 11, through December of 2020.

The pandemic's impact in the immediate aftermath and beyond will not be a focus of this book, largely because most countries in the world have not yet reached a post-pandemic stage, although the concluding chapter draws out implications from the short-term impact and responses for that aftermath.



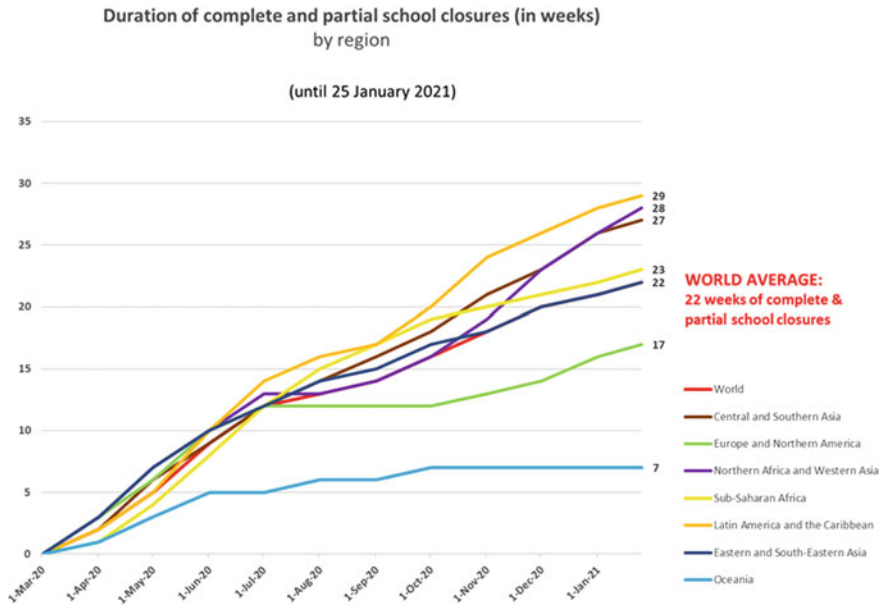
Education policy responses need to differentially address each of these three timeframes: short-term mitigation of the impact during the emergency; immediate remediation and recovery in the immediate aftermath; and medium-term recovery and improvement after the initial aftermath of the pandemic.

As the epidemic spread from Wuhan, China—where it first broke out in December of 2019—throughout the world, local and national governments suspended the operation of schools as a way to contain the rapid spread of the virus. Limiting gatherings in schools, where close proximity would rapidly spread respiratory infections, had been done in previous pandemics as a way to prevent excess demand for critical emergency services in hospitals. Some evidence studying past epidemics suggested in fact that closing schools contributed to slow down the spread of infections. A study of non-pharmaceutical interventions adopted during the 1918–19 pandemic in the United States shows that mortality was lower in cities that closed down schools and banned public gatherings (Markel et al., 2007). A review of 79 epidemiological studies, examining the effect of school closures on the spread of influenza and pandemics, found that school closures contributed to contain the spread (Jackson et al., 2013).

In January 26, China was the first country to implement a national lockdown of schools and universities, extending the Spring Festival. As UNESCO released the first global report on the educational impact of the pandemic on March 3, 2020, twenty-two countries had closed schools and universities as part of the measures to contain the spread of the virus, impacting 290 million students (UNESCO, 2020). Following the World Health Organization announcement, on March 11, 2020, that COVID-19 was a global pandemic, the number of countries closing schools increased rapidly. In the following days 79 countries had closed down schools (UNESCO, 2020).

Following the initial complete closure of schools in most countries around the world there was a partial reopening of schools, in some cases combined with localized closings. By the end of January 2021, UNESCO estimated that globally, schools had completely closed an average of 14 weeks, with the duration of school closures extending to 22 weeks if localized closings were included (UNESCO, 2021). There is great variation across regions in the duration of school closures, ranging from 20 weeks of complete national closings in Latin America and the Caribbean to just one month in Oceania, and 10 weeks in Europe. There is similar variation with respect to localized closures, from 29 weeks in Latin America and the Caribbean to 7 weeks in Oceania, as seen in Fig. 1.1. By January 2021, schools were fully open in 101 countries.

As it became clear that it would take considerable time until a vaccine to prevent infections would become available, governments began to consider options to continue to educate in the interim. These options ranged from total or partial reopening of schools to creating alternative means of delivery, via online instruction, distributing learning packages, deploying radio and television, and using mobile phones for one- or two-way communication with students. In most cases, deploying these alternative means of education was a process of learning by doing, sometimes improvisation, with a rapid exchange of ideas across contexts about what was working well and about much that was not working as intended. As previous



**Fig. 1.1** Duration of complete and partial school closures by region by January 25, 2021. *Source* UNESCO (2021)

experience implementing these measures in a similar context of school lockdown was limited, there was not much systematized knowledge about what ‘worked’ to transfer any approach with some confidence of what results it would produce in the context created by the pandemic. As these alternatives were put in place, educators and governments learned more about what needs they addressed, and about which ones they did not.

For instance, it soon became apparent that the creation of alternative ways to deliver instruction was only a part of the challenge. Since in many jurisdictions schools deliver a range of services—from food to counseling services—in addition to instruction, it became necessary to find alternative ways to deliver those services as well, not just to meet recognized needs prior to the pandemic but because the emergency was increasing poverty, food insecurity, and mental health challenges, making such support services even more essential.

As governments realized that the alternative arrangements to deliver education had diminished the capacity to achieve the instructional goals of a regular academic year, it became necessary to reprioritize the focus of instruction.

In a study conducted at the end of April and beginning of May 2020, based on a survey administered to a haphazard sample of teachers and education administrators in 59 countries, we found that while schools had been closed in all cases, plans for education continuity had been implemented in all countries we had surveyed. Those plans involved using existing online resources, online instruction delivered by students’ regular teachers, instructional packages with printed resources, and

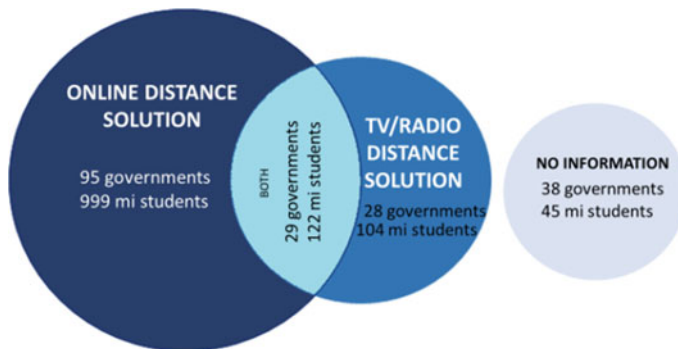
educational television programmes. The survey revealed severe disparities in access to connectivity, devices, and the skills to use them among children from different socio-economic backgrounds. On balance, however, the strategies for educational continuity were rated favourably by teachers and administrators, who believed they had provided effective opportunities for student learning. These strategies prioritized academic learning and provided support for teachers, whereas they gave less priority to the emotional and social development of students.

These strategies deployed varied mechanisms to support teachers, primarily by providing them access to resources, peer networks within the school and across schools, and timely guidance from leadership. A variety of resources were used to support teacher professional development, mostly relying on online learning platforms, tools that enabled teachers to communicate with other teachers, and virtual classrooms (Reimers & Schleicher, 2020).

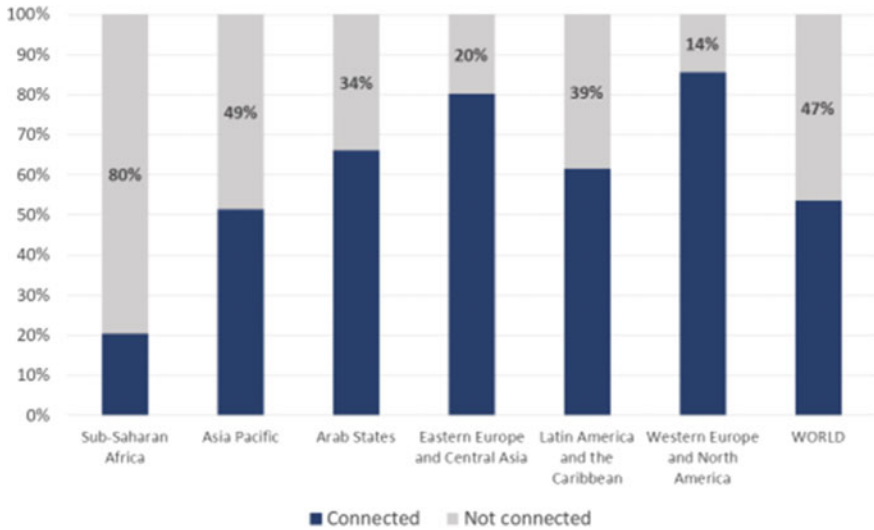
Some countries relied more heavily on some of these approaches, while others used a combination, as reported by UNESCO and seen in Fig. 1.2.

A significant number of children did not have access to the online solutions provided because of lack of connectivity, as shown in a May 2020 report by UNESCO. In Sub-Saharan Africa, a full 80% of children lacked internet at home; this figure was 49% in Asia Pacific; 34% in the Arab States and 39% in Latin America, but it was only 20% in Eastern Europe and Central Asia and 14% in Western Europe and North America (Giannini, 2020).

Similar results were obtained by a subsequent cross-national study administered to senior education planning officials in ministries of education, conducted by UNESCO, UNICEF, and the World Bank. These organizations administered two surveys between May and June 2020, and between July and October 2020, to government officials in 118 and 149 countries, respectively. The study documented extended periods of school closures. The study further documented differences among countries in whether student learning was monitored, with much greater levels of monitoring in high income countries than in lower income countries.



**Fig. 1.2** Government-initiated distance learning solutions and intended reach. *Source* Giannini (2020)



**Fig. 1.3** Share of students with Internet at home in countries relying exclusively on online learning platforms. *Source* Giannini (2020)

The study also confirmed that most governments created alternative education delivery systems during the period when schools were closed, through a variety of modalities including online platforms, television, radio, and paper-based instructional packages. Governments also adopted targeted measures to support access to these platforms for disadvantaged students, provided devices or subsidized connectivity, and supported teachers and caregivers. The report shows disparities between countries at different income levels, with most high-income countries providing such support and a third of lower income countries not providing any specific support for connectivity to low-income families (UNESCO-UNICEF-the World Bank, 2020).

The UNESCO-UNICEF-World Bank surveys reveal considerable differences in the education responses by level of income of the country. For instance, whereas by the end of September of 2020 schools in high-income countries had been closed 27 days, on average, that figure increased to 40 days in middle-income countries, to 68 days in lower middle-income countries, and to 60 days in low-income countries (Ibid, 15).

For most countries there were no plans to systematically assess levels of students' knowledge and skills as schools reopened, and national systematic assessments were suspended in most countries. There was considerable variation across countries, and within countries, in terms of when schools reopened and how they did so. Whereas some countries offered both in-person and remote learning options—and gave students a choice of which approach to use—others did not offer choices. There were also variations in the amount of in-person instruction students had access to once schools reopened. Some schools and countries introduced measures to remediate learning loss as schools reopened, but not all did.

## 1.4 The Backdrop to the Pandemic: Enormous and Growing Inequality and Social Exclusion

The pandemic impacted education systems as they faced two serious interrelated preexisting challenges: educational inequality and insufficient relevance. A considerable growth in economic inequality, especially among individuals within the same nations, has resulted in challenges of social inclusion and legitimacy of the social contract, particularly in democratic societies. Over the last thirty years, income inequality has increased in countries such as China, India, and most developed countries. Over the last 25 years there are also considerable inequalities between nations, even though those have diminished over the last 25 years. The average income of a person in North America is 16 times greater than the income of the average person in Sub-Saharan Africa. 71% of the world's population live in countries where inequality has grown (UN, 2021). The Great Recession of 2008–2009 worsened this inequality (Smeedling, 2012).

One of the correlates of income inequality is educational inequality. Studies show that educational expansion (increasing average years of schooling attainment and reducing inequality of schooling) relates to a reduction in income inequality (Coadi & Dizioly, 2017). But education systems, more often than not, reflect social inequalities, as they offer the children of the poor, often segregated in schools of low quality, deficient opportunities to learn skills that help them improve their circumstances, whereas they provide children from more affluent circumstances opportunities to gain knowledge and skills that give them access to participate economically and civically. In doing so, schools serve as a structural mechanism that reproduces inequality, and indeed legitimize it as they obscure the structural forces that sort individuals into lives of vastly different well-being with an ideology of meritocracy that in effect blames the poor for the circumstances that their lack of skills lead to, when they have not been given effective opportunities to develop such skills.

There is abundant evidence of the vastly different learning outcomes achieved by students from different social origins, and of the differences in the educational environments they have access to. In the most recent assessment of student knowledge and skills conducted by the Organization for Economic Cooperation and Development (OECD), the socioeconomic status of students is significantly correlated to student achievement in literacy, math, and science in all 76 countries participating in the study (OECD, 2019). On average, among OECD countries, 12% of the variance in reading performance is explained by the socioeconomic background of the student. The strength of this relationship varies across countries, in some of them it is lower than the average as is the case in Macao (1.7%), Azerbaijan (4.3%), Kazakhstan (4.3%), Kosovo (4.9%), Hong Kong (5.1%), or Montenegro (5.8%). In other countries, the strength of the relationship between socioeconomic background and reading performance is much greater than the average such as in Belarus (19.8%), Romania (18.1%), Philippines (18%), or Luxembourg (17.8%). A significant reading gap exists between the students in the bottom 25% and those in the top 25% of the socioeconomic distribution, averaging 89 points, which is a fifth of

the average reading score of 487, and almost a full standard deviation of the global distribution of reading scores in PISA. In spite of these strong associations between social background and reading achievement, there are students who defy the odds; the percentage of students whose social background is at the bottom 25%—the poorest students—whose reading performance is in the top 25%—academically resilient students—averages 11% across all OECD countries. This percentage is much greater in the countries where the relationship between social background and achievement is lower. In Macao, for instance, 20% of the students in the top 25% of achievement are among the poorest 25%. In contrast, in countries with a strong relationship between socioeconomic background and reading achievement, the percentage of academically resilient students among the poor is much lower, in Belarus and Romania it is 9%. These differences in reading skills by socioeconomic background are even more pronounced when looking at the highest levels of reading proficiency, those at which students can understand long texts that involve abstract and counterintuitive concepts as well as distinguish between facts and opinions based on implicit clues about the source of the information. Only 2.9% of the poorest students, compared with 17.4% among the wealthier quarter, can read at those levels of proficiency on average for the OECD (OECD, 2019b, p. 58). Table 1.1 summarizes socioeconomic disparities in reading achievement. The relationship of socioeconomic background to students' knowledge and skills is stronger for math and science. On average, across the OECD, 13.8% of math skills and 12.8% of science skills are predicted by socioeconomic background.

The large number of children who fail to gain knowledge and skills in schools has been characterized, by World Bank staff and others, as 'a global learning crisis' or 'learning poverty', though the evidence on the strong correlation of learning poverty to family poverty suggests that this should more aptly be characterized as 'the learning crisis for the children of the poor' (World Bank, 2018). These low levels of learning have direct implications for the ability of students to navigate the alternative education arrangements put in place to educate during the pandemic; clearly students who can read at high levels are more able to study independently through texts and other resources than struggling readers.

The second interrelated challenge is that of ensuring that what ALL children learn in school is relevant to the challenges of the present and, most importantly, of the future. While the challenge of the relevance of learning is not new in education, the rapid developments in societies, resulting from technologies and politics, create a new urgency to address it. For students with the capacity to set personal learning goals, or with more self-management skills, or with greater skills in the use of technology, or with greater flexibility and resiliency, or with prior experience with distance learning, it was easier to continue to learn through the remote arrangements established to educate during the pandemic than it was for students with less developed skills in those domains. While the emphasis on the development of such breadth of skills, also called twenty-first century skills, has been growing around the world, as reflected in a number of recent curriculum reforms, there are large gaps between the ambitious aspirations reflected in modern curricula and standards, and the implementation of those reforms and instructional practice (Reimers, 2020b; Reimers, 2021).

**Table 1.1** Snapshot of socio-economic disparities in academic performance

Mean reading score in PISA 2018		Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> )	Difference between advantaged <sup>2</sup> and disadvantaged students in reading	Percentage of disadvantaged students who are academically resilient <sup>3</sup>
OECD average		M	12.0	89	11
B-S-J-Z (China)		0.81	12.6	82	12
Singapore		0.95	13.2	104	10
Macao (China)		0.88	1.7	31	20
Hong Kong (China)		0.98	5.1	59	16
Estonia		0.93	6.2	61	16
Canada		0.86	6.7	68	14
Finland		0.96	9.2	79	13
Ireland		0.96	10.7	75	13
Korea		0.88	8.0	75	13
Poland		0.90	11.6	90	11
Sweden		0.86	10.7	89	11
New Zealand		0.89	12.9	96	12

(continued)

Table 1.1 (continued)

		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students above the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students not significantly different from the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students below the OECD average	
	Mean reading score in PISA 2018	Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> )	Difference between advantaged <sup>2</sup> and disadvantaged students in reading	Percentage of disadvantaged students who are academically resilient <sup>3</sup>		
	Mean		%	Score dif	%		
United States	505	0.86	12.0	99	10		
United Kingdom	504	0.85	9.3	80	14		
Japan	504	0.91	8.0	72	12		
Australia	503	0.89	10.1	89	13		
Chinese Taipei	503	0.92	11.4	89	12		
Denmark	501	0.88	9.9	78	12		
Norway	499	0.91	7.5	73	12		
Germany	498	0.99	17.2	113	10		
Slovenia	495	0.98	12.1	80	12		

(continued)



Table 1.1 (continued)

	Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students above the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students not significantly different from the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students below the OECD average	
	Mean reading score in PISA 2018	Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> )	Difference between advantaged <sup>2</sup> and disadvantaged students in reading	Percentage of disadvantaged students who are academically resilient <sup>3</sup>	
	Mean	%	Score dif	%	%	
Belgium	493	0.94	17.2	109	9	
France	493	0.91	17.5	107	10	
Portugal	492	0.87	13.5	95	10	
Czech Republic	490	0.95	16.5	105	9	
Netherlands	485	0.91	10.5	88	13	
Austria	484	0.89	13.0	93	10	
Switzerland	484	0.89	15.6	104	9	
Croatia	479	0.89	7.7	63	15	
Latvia	479	0.89	7.2	65	12	

(continued)

Table 1.1 (continued)

	Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students above the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students not significantly different from the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students below the OECD average	
	Mean reading score in PISA 2018	Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> )	Difference between advantaged <sup>2</sup> and disadvantaged students in reading	Percentage of disadvantaged students who are academically resilient <sup>3</sup>	
	Mean	%	%	Score dif	%	
Russia	479	0.94	7.3	67	13	
Italy	476	0.85	8.9	75	12	
Hungary	476	0.90	19.1	113	8	
Lithuania	476	0.90	13.2	89	11	
Iceland	474	0.92	6.6	72	13	
Belarus	474	0.88	19.8	102	9	
Israel	470	0.81	14.0	121	8	
Luxembourg	470	0.87	17.8	122	8	
Ukraine	466	0.87	14.0	90	12	

(continued)

Table 1.1 (continued)

	Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students above the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students not significantly different from the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students below the OECD average	
	Mean reading score in PISA 2018	Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> )	Difference between advantaged <sup>2</sup> and disadvantaged students in reading	Percentage of disadvantaged students who are academically resilient <sup>3</sup>	
	Mean	%	%	Score dif	%	
Turkey	466	0.73	11.4	76	15	
Slovak Republic	458	0.86	17.5	106	9	
Greece	457	0.93	10.9	84	12	
Chile	452	0.89	12.7	87	11	
Malta	448	0.97	7.6	85	13	
Serbia	439	0.88	7.8	73	13	
United Arab Emirates	432	0.92	11.1	105	7	
Romania	428	0.71	18.1	109	9	
Uruguay	427	0.77	16.0	99	9	

(continued)

Table 1.1 (continued)

	Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students above the OECD average			Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students not significantly different from the OECD average			Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students below the OECD average		
	Mean reading score in PISA 2018	Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> ) %	Difference between advantaged <sup>2</sup> and disadvantaged students in reading Score dif	Percentage of disadvantaged students who are academically resilient <sup>3</sup> %				
Costa Rica	426	0.63	15.6	83	10				
Cyprus	424	0.92	6.8	69	13				
Moldova	424	0.95	17.3	102	8				
Montenegro	421	0.95	5.8	55	14				
Mexico	420	0.66	13.7	81	11				
Bulgaria	420	0.72	15.0	106	6				
Jordan	419	0.57	7.7	64	12				
Malaysia	415	0.72	16.3	89	10				
Brazil	413	0.56	14.0	97	10				

(continued)

Table 1.1 (continued)

		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students above the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students not significantly different from the OECD average		Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students below the OECD average	
	Mean reading score in PISA 2018	Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> )	Difference between advantaged <sup>2</sup> and disadvantaged students in reading	Percentage of disadvantaged students who are academically resilient <sup>3</sup>		
	Mean		%	Score dif	%		
Colombia	412	0.62	13.7	86	10		
Brunei Darussalam	408	0.97	16.0	103	9		
Qatar	407	0.92	8.6	93	9		
Albania	405	0.46	7.8	61	12		
Bosnia and Herzegovina	403	0.82	7.3	58	13		
Argentina	402	0.81	17.1	102	8		
Peru	401	0.73	21.5	110	6		
Saudi Arabia	399	0.85	11.5	74	11		
Thailand	393	0.72	12.0	69	13		

(continued)

Table 1.1 (continued)

	Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students above the OECD average			Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students not significantly different from the OECD average			Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students below the OECD average		
	Mean reading score in PISA 2018	Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> ) %	Difference between advantaged <sup>2</sup> and disadvantaged students in reading	Percentage of disadvantaged students who are academically resilient <sup>3</sup>	Mean reading score in PISA 2018	Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> ) %	Difference between advantaged <sup>2</sup> and disadvantaged students in reading
	Mean			Score dif	%				%
North Macedonia	393	0.95	10.2	80	13				
Baku (Azerbaijan)	389	0.46	4.3	41	17				
Kazakhstan	387	0.92	4.3	40	16				
Georgia	380	0.83	9.4	68	12				
Panama	377	0.53	17.0	95	9				
Indonesia	371	0.85	7.8	52	14				
Morocco	359	0.64	7.1	51	13				
Lebanon	353	0.87	12.2	103	9				
Kosovo	353	0.84	4.9	40	17				

(continued)

Table 1.1 (continued)

	Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students above the OECD average			Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students not significantly different from the OECD average			Countries/economies with a mean performance/strength of socio-economic gradient/share of resilient students below the OECD average		
	Mean reading score in PISA 2018	Coverage Index 3: coverage of 15-year-old population	Strength: percentage of variance in reading performance explained by ESCS <sup>1</sup> (R <sup>2</sup> )	Difference between advantaged <sup>2</sup> and disadvantaged students in reading	Percentage of disadvantaged students who are academically resilient <sup>3</sup>				
	Mean		%	Score dif	%				
Dominican Republic	342	0.73	8.9	65	12				
Philippines	340	0.68	18.0	88	8				
Spain	M	0.92	M	M	m				

Source (OECD, 2019b, Table II.1. p. 17)

The challenges of low efficacy and relevance have received attention from governments and from international development agencies, including the United Nations and the OECD. The UN Sustainable Development Goals, for instance, propose a vision for education that aligns with achieving an inclusive and sustainable vision for the planet, even though, by most accounts, the resources deployed to finance the achievement of the education goal fall short with respect to those ambitions. In 2019 UNESCO's director general tasked an international commission with the preparation of a report on the Futures of Education, focusing in particular on the question of how to align education institutions with the challenges facing humanity and the planet.

## 1.5 The Pandemic and Health

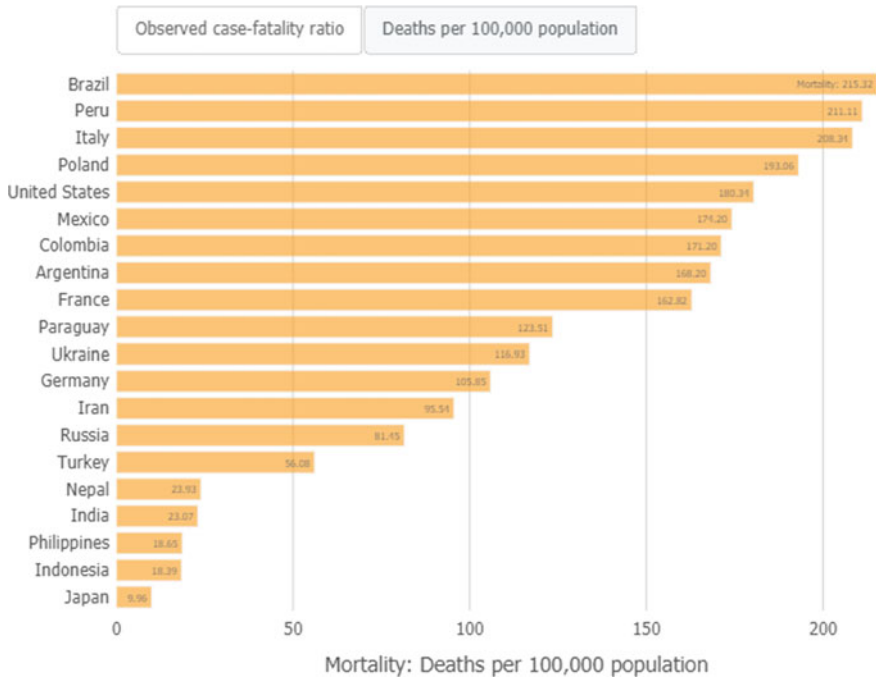
The main direct effect of the Coronavirus disease is in infecting people, compromising their health and in some cases causing their death. By May 27 of 2021, 168,040,871 people worldwide had become infected, of whom 3,494,758 had died reportedly from COVID-19 (World Health Organization, 2021a) and an additional 3 million had likely died from COVID-19 as they were excess deaths relative to the total number of deaths the previous year (World Health Organization, 2021b). As expected, more people are infected in countries with larger populations, but the rate of infection by total population and the rate of deaths by total population suggest variations in the efficacy of health policies used to contain the spread as shown in Fig. 1.4, which includes the top 20 countries with the highest relative number of COVID-19 fatalities. These differences reflect differences in the efficacy of health policies to contain the pandemic, as well as differences in the response of the population to guidance from public health authorities. Countries in which political leaders did not follow science-based advice to contain the spread, and in which a considerable share of the population did not behave in ways that contributed to mitigate the spread of the virus, not wearing face masks or socially distancing for instance, such as in Brazil and the United States, fared much poorer than those who did implement effective public health containment measures such as China, South Korea, or Singapore, with such low numbers of deaths per 100,000 people that they are not even on this chart of the top 20.

## 1.6 The Pandemic, Poverty, and Inequality

The social distancing measures limited the ability of business to operate, reducing household income and demand. This produced an economic recession in many countries. For example, in the United States, 43% of small businesses closed temporarily (Bartik et al., 2020).

A household survey in seventeen countries in Latin America and the Caribbean demonstrates that the COVID-19 pandemic differentially impacted households at





**Fig. 1.4** Number of reported COVID-19 deaths per 100,000 population in the 20 countries with the highest rates as of May 27, 2021. *Source* Johns Hopkins University. Coronavirus Resource Center (2021)

different income levels. The study shows significant and unequal job losses with stronger effects among the lowest income households. The study revealed that 45% of respondents reported that a member of their household had lost a job and that, for those owning a small family business, 58% had a household member who had closed their business. These effects are considerably more pronounced among the households with lower incomes, with nearly 71 percent reporting that a household member lost their job and 61 percent reporting that a household member closed their business compared to only 14 percent who report that a household member lost their job and 54 percent reporting that a household member closed their business among those households with higher incomes (Bottan et al., 2020).

It is estimated that the global recession augmented global extreme poverty by 88 million people in 2020, and an additional 35 million in 2021 (World Bank, 2020). A survey conducted by UNICEF in Mexico documented a 6.7% increase in hunger and a 30% loss in household income between May and July of 2020 (UNICEF México, 2020).

Because schools in some countries offer a delivery channel for meals as part of poverty reduction programming, several countries created alternative arrangements during the pandemic to deliver those or replaced them with cash transfer programs.

Sao Paulo, Brazil, for instance, created a cash transfer program “*Merenda en Casa*” to replace the daily meal school programs (Dellagnelo & Reimers, 2020; Sao Paulo Government, 2020).

In the summer of 2020, Save the Children conducted a survey of children and families in 46 countries to examine the impact of the crisis, focusing on participants in their programs, other populations of interest, and the general public. The report of the findings for program participants—which include predominantly vulnerable children and families—documents violence at home, reported in one third of the households. Most children (83%) and parents (89%) reported an increase in negative feelings due to the pandemic and 46% of the parents reported psychological distress in their children. For children who were not in touch with their friends, 57% were less happy, 54% were more worried, and 58% felt less safe. For children who could interact with their friends less than 5% reported similar feelings. Children with disabilities showed an increase in bed-wetting (7%) and unusual crying and screaming (17%) since the outbreak of the pandemic, an increase three times greater than for children without disabilities. Children also reported an increase in household chores assigned to them, 63% for girls and 43% for boys, and 20% of the girls said their chores were too many to be able to devote time to their studies, compared to 10% of boys (Ritz et al., 2020).

## 1.7 Readiness for Remote Teaching During a Pandemic

Countries varied in the extent to which they had, prior to the pandemic, supported teachers and students in developing the capacities to teach and to learn online, and they varied also in the availability of resources which could be rapidly deployed as part of the remote strategy of educational continuity. Table 1.2 shows the extent to which teachers were prepared to use Information and Communication Technologies (ICT) in their teaching based on a survey administered by the OECD in 2018. The percentage of teachers who report that the use of ICT was part of their teacher preparation ranges from 37 to 97%. There is similar variation in the percentage of teachers who feel adequately prepared to use ICT, or who have received recent professional development in ICT, or who feel a high need for professional development in ICT. There is also quite a range in the percentage of teachers who regularly allow students to use ICT as part of their schoolwork.

This variation, along with variation in availability of technology and connectivity among students, creates very different levels of readiness to teach remotely online as part of the strategy of educational continuity during the interruption of in-person instruction.

**Table 1.2** Readiness to use ICT in teaching

	Countries/economies where the indicator is <b>above</b> the OECD average					
	Countries/economies where the indicator is <b>not statistically different</b> from the OECD average					
	Countries/economies where the indicator is <b>below</b> the OECD average					
	Percentage of teachers for whom the “use of ICT for teaching” has been included in their formal education or training	Percentage of teachers who felt “well prepared” or “very well prepared” for the use of ICT for teaching	Percentage of teachers for whom “use of ICT for teaching” has been included in their recent professional development activities	Percentage of teachers reporting a high level of need for professional development in ICT skills for teaching	Percentage of teachers who “frequently” or “always” let students use ICT for projects or class work	Percentage of principals reporting shortage or inadequacy of digital technology for instruction
	Chapter 4	Chapter 4	Chapter 5	Chapter 5	Chapter 2	Chapter 3
Alberta (Canada)	71	42	56	8	66	12
Australia*	65	39	67	11	78	12
Austria	40	20	46	15	33	18
Belgium	51	28	40	18	29	29
- <i>Flemish Comm. (Belgium)</i>	56	34	45	9	38	16
Brazil	64	64	52	27	42	59
Bulgaria	58	50	63	23	44	26
CABA (Argentina)	53	50	61	20	64	39
Chile	77	67	51	17	63	13
Colombia	75	59	78	34	71	64
Croatia	47	36	73	26	46	25
Czech Republic	45	28	41	13	35	24
Denmark	47	40	47	11	90	13
England (UK)	75	51	40	5	41	15
Estonia	54	30	74	19	46	12
Finland	56	21	74	19	51	20
France	51	29	50	23	36	30
Georgia	45	47	67	33	53	29

(continued)

**Table 1.2** (continued)

	Countries/economies where the indicator is <b>above</b> the OECD average					
	Countries/economies where the indicator is <b>not statistically different</b> from the OECD average					
	Countries/economies where the indicator is <b>below</b> the OECD average					
	Percentage of teachers for whom the “use of ICT for teaching” has been included in their formal education or training	Percentage of teachers who felt “well prepared” or “very well prepared” for the use of ICT for teaching	Percentage of teachers for whom “use of ICT for teaching” has been included in their recent professional development activities	Percentage of teachers reporting a high level of need for professional development in ICT skills for teaching	Percentage of teachers who “frequently” or “always” let students use ICT for projects or class work	Percentage of principals reporting shortage or inadequacy of digital technology for instruction
Hungary	51	66	69	20	48	36
Iceland	46	26	63	21	54	5
Israel*	58	47	69	29	52	40
Italy	52	36	68	17	47	31
Japan	60	28	53	39	18	34
Kazakhstan	75	69	90	30	66	45
Korea	59	48	61	21	30	24
Latvia	55	48	77	23	48	41
Lithuania	45	57	69	24	62	30
Malta	70	49	48	14	48	6
Mexico	77	80	64	16	69	44
Netherlands	49	29	61	16	51	16
New Zealand	59	34	73	14	80	18
Norway	46	36	58	22	m	11
Portugal	47	40	47	12	57	55
Romania	70	70	52	21	56	50
Russian Federation	69	72	75	15	69	32

(continued)

**Table 1.2** (continued)

	Countries/economies where the indicator is <b>above</b> the OECD average					
	Countries/economies where the indicator is <b>not statistically different</b> from the OECD average					
	Countries/economies where the indicator is <b>below</b> the OECD average					
	Percentage of teachers for whom the “use of ICT for teaching” has been included in their formal education or training	Percentage of teachers who felt “well prepared” or “very well prepared” for the use of ICT for teaching	Percentage of teachers for whom “use of ICT for teaching” has been included in their recent professional development activities	Percentage of teachers reporting a high level of need for professional development in ICT skills for teaching	Percentage of teachers who “frequently” or “always” let students use ICT for projects or class work	Percentage of principals reporting shortage or inadequacy of digital technology for instruction
Saudi Arabia	73	72	76	28	49	61
Shanghai (China)	79	63	77	30	24	10
Singapore	88	60	75	14	43	2
Slovak Republic	62	45	60	17	47	25
Slovenia	53	67	59	8	37	4
South Africa	62	54	53	32	38	65
Spain	38	36	68	15	51	21
Sweden	37	37	67	22	63	10
Turkey	74	71	61	7	67	22
United Arab Emirates	86	86	85	10	77	31
United States	63	45	60	10	60	19
Viet Nam	97	80	93	55	43	82
OECD average-31	56	43	60	18	53	25

Source OECD, TALIS 2018 Database, Tables I.4.13, I.4.13, I.5.18, I.5.21, I.2.1 and I.3.63

\*Participation rate of principals is too low to ensure comparability for principals’ reports and country estimates are not included in the OECD average. Information on data for Israel: <https://oe.cd/israel-disclaimer>

## 1.8 What are the Short-term Educational Impacts of the Pandemic?

The study of the ways in which the pandemic can be expected to influence the opportunity to learn can be based on what is known about the determinants of access to school and learning, drawing on research predating the pandemic.

Opportunity to learn can be usefully disaggregated into opportunity to access and regularly attend school, and opportunity to learn while attending and engaging in school. John Carroll proposed a model for school learning which underscored the primacy of learning time. In his model, learning is a function of time spent learning relative to time needed to learn. This relationship between aptitude (time needed to learn) and learning is mediated by opportunity to learn (amount of time available for learning), ability to understand instruction, quality of instruction, and perseverance (Carroll, 1963).

In a nutshell, the pandemic limited student opportunity for interactions with peers and teachers and for individualized attention—decreasing student engagement, participation, and learning—while augmenting the amount of at-home work which, combined with greater responsibilities and disruptions, diminished learning time while increasing stress and anxiety, and for some students, aggravated mental health challenges. The pandemic also increased teacher workload and stress while creating communication and organizational challenges among school staff and between them and parents.

Clearly the pandemic constrained both the home conditions and the school conditions that support access to school, regular attendance, and time spent learning. The alternative strategies deployed to sustain the continuity of schooling in all likelihood only partially restored opportunity to learn and quality of instruction. Given the lower access that disadvantaged students had to technology and connectivity, and the greater likelihood that their families were economically impacted by the pandemic, it should be expected that their opportunities to learn were disproportionately diminished, relative to their peers with more access and resources and less stressful living conditions.

As a result of these constraints on opportunity to learn, the most vulnerable students were more likely to disengage from school. Such disengagement is, in effect, a form of school dropout, at least temporarily. As students fall behind because of their lack of engagement, this further diminishes their motivation, leading to more disengagement. It is possible that such a form of temporary dropout may lead to permanent dropout as learners take on other roles, and as learning recovery and catch up become more difficult as they fall further behind in terms of curricular expectations. The children who drop out will add to the already large number of children out of school, 258 million in 2018 (UNESCO, 2018). UNESCO has estimated that 24 million children are at risk of not returning to school (UNESCO, 2020a) which would bring the total number of out of school children to the same level as in the year 2000, in effect wiping out two decades of progress in educational access (UNESCO, 2020c, 2). These estimates are based on the following likely processes:

(a) educational and socioemotional disengagement, (b) increased economic pressure, and (c) health issues and safety concerns (UNESCO, 2020a).

In addition to the direct impact of the health and economic shocks on student engagement, the lack of engagement of students was a function of the inadequacy of government efforts to sustain education through alternative means and the circumstances of students. In Mexico, for instance, the Federal Ministry of Education in Mexico closed schools on March 23, 2020; these closures remained in effect for at least a year. When the academic year began on August 24, 2020, the government deployed a national strategy for education continuity consisting of remote learning through television, complemented by access to digital platforms such as Google and local radio educational programming, with programs of teacher professional development on basic ICT skills to engage students remotely (World Bank, 2020c; SEP, Boletín 101, 2020). A television strategy was adopted for education continuity during the pandemic since only 56.4% of households have internet access, while 92.5% have a television (INEGI, 2019) and Mexico has a long-standing program of TV secondary school (Ripani & Zucchetti, 2020). Since March 2020, educational television content was delivered through *Aprende en Casa I, II, and III* (Learning at Home). Some Mexican states complemented the national strategy with additional measures, such as radio programs and textbook distribution, which were planned locally (World Bank, 2020c). Indigenous communities were also reached in 15 indigenous languages through partnerships with local radio networks (Ripani & Zucchetti, 2020). The State of Quintana Roo, for example, which has a large Mayan population, produced and distributed educational workbooks for students on various subjects written both in Spanish and Mayan languages (SEQ, 2020). The State Secretary of Education also created a YouTube channel with video lessons and a public television channel, within Quintana Roo's Social Communication system, that was solely dedicated to the distribution of educational content (González, 2020; Hinckley et al., 2021).

While the choice of a TV-based strategy for education continuity was predicated on the almost universal accessibility to television, and on a long tradition of the Ministry of Education producing educational TV (*Telesecundaria*), a survey conducted in June 2020 by an agency of the Mexican government showed that 57.3% of the students lacked access to a computer, television, radio, or cell phone during the emergency and 52.8% of the strategies required materials that students did not have in their homes (MEJOREDU, 2020a). In the same survey, 51.4% of students reported that the activities online, on the TV, and on radio programs were boring (MEJOREDU, 2020a). Students reported challenges to learning stemming from limited support or lack of explanations from their teachers, lack of clarity in the activities they were supposed to carry out, limited feedback on the work completed, lack of knowledge about their successes or mistakes in the activities, insufficient understanding of what they were doing, less learning and understanding, and perception of not having the necessary knowledge to pass onto the next grade. More than half of the students (60% at the primary level and 44% at the secondary level) indicated that during the period of remote learning they had simply reviewed previously taught content (MEJOREDU, 2020a).

The same study canvassed teachers for their views on factors which prevented student engagement, 84.6% of the teachers mentioned lack of internet access, 76.3% mentioned lack of electronic devices to access activities, and 73.3% mentioned limited economic resources (MEJOREDU, 2020a, p. 10). Students, in turn, reported the following as factors which excluded them: difficulty in following the activities (“it’s difficult,” “I don’t understand,” “I don’t have time”) followed by stress or frustration, the need to attend to housework, obligation to take care of other people, and lack of motivation expressed as laziness, tiredness, boredom, loss of interest, or discouragement. Half of the students reported that the tasks involved in learning remotely caused stress and 40% reported sadness and low levels of motivation (MEJOREDU, 2020a, p. 10).

Mexico’s approach to education continuity is illustrative of the approach followed by many other countries. Costa Rica, for example, also closed down schools upon the declaration of a national emergency in March 2020, transitioning to a virtual school program, delivered through an online program, and a distance learning program that varied throughout different cantons in the country (Diaz Rojas, 2020). These were supplemented by an educational television program of two hours a day during weekdays for students in the upper elementary grades, a daily one-hour radio program augments these efforts. Five months after the initiation of the virtual strategy, 35% of the students had not logged into the free online accounts provided to them by the Ministry (Direccion de Prensa y Relaciones Publicas, 2020).

Bangladesh also closed schools on March 16th, 2020, and gradually extended what was to be a two week lock down for at least a year, relying on a distance learning strategy of education continuity relying on internet, TV, radio, and mobile phones, which had serious challenges reaching students in a country where only 13% of the population used the internet in 2019 and only 5.6% of households have access to a computer (World Bank, 2019). Access to TV was greater, reaching 56% of the households, but very few had access to radio (0.6% of the population). While access to mobile phones was greater it was not universal, with 92% of families in the lowest wealth quintile with access to mobile phones, but only 19% of the total population with access to a smartphone (Bell et al., 2021; World Bank, 2019).

Some countries found the prospects of developing alternative forms of education continuity so daunting that they suspended the school year entirely. In Kenya, for instance, by July of 2020 the Ministry of Education had decided to close all public schools in the country until January 2021 and then restart the academic school year. The decision was revised in October of 2020, with a partial reopening of schools for the grades in which students take exams (grade 4, class 8, and form 4) in order to prepare students for the official school-leaving examinations and for critical transitions (Voothaluru et al., 2021).

In South Africa, COVID-19 was met by wide-scale school closures, with no practical way to shift to remote learning given lack of student access to the internet (Statistics South Africa, 2019; UNICEF, 2020). In September 2020, schools reopened after several months of being closed, only to close again in January 2021, during the second wave of the pandemic (UNICEF, 2020).



Even well-resourced countries shifted to remote instruction for at least a short period. In the United Arab Emirates, for instance, the Ministry of Education shifted education to remote learning from March to June 2020. Upon resuming in-person instruction at the start of the new academic year, however, families had the discretion to choose whether to participate fully in-person, fully online, or in blended learning modalities. In spite of the strong commitment to inclusion of people with disabilities in the UAE, providing adequate accommodations for them was challenging (Mohajeri et al., 2021).

Among the many challenges faced by schools and education systems, as they relied on these alternative forms of educational continuity, was the assessment of students' knowledge. Many national assessments were cancelled. Absence of information on student knowledge and skills prevented determining the extent of learning loss and the implementation of remedial programs to address it. Other challenges stemmed from teachers' limited skills in teaching remotely, as shown earlier.

While the lack of reliable assessments of learning loss to date prevent estimating the full impact of the pandemic for most countries in the world, the limited studies available document deep impacts, particularly for disadvantaged students. A recent study conducted in Belgium, where schools were closed for approximately nine weeks, shows significant learning losses in language and math (a decrease in school averages of mathematics scores of 0.19 standard deviations and of Dutch scores of 0.29 standard deviations as compared to the previous cohort) and an increase in inequality in learning outcomes by 17% for math and 20% for Dutch, in part a result of increases in inequality between schools (an increase in between school inequality of 7% for math and 18% for Dutch). Losses are greater for schools with a higher percentage of disadvantaged students (Maldonado, De Witte, 2020). A review of this and seven additional empirical studies of learning loss, of which one focused on higher education, finds learning loss also in the Netherlands, the United States, Australia, and Germany, although the amount of learning loss is lower than in the study in Belgium. A study in Switzerland finds learning loss to be insignificant and a study in Spain finds learning gains during the pandemic (Donnelly & Patrinos, 2021, 149). These seven out of eight studies that identified learning loss were conducted in countries where education systems were relatively well-resourced and covered relatively short periods of school closures: 9 weeks in Belgium, 8 weeks in the Netherlands, 8 weeks in Switzerland, 8–10 weeks in Australia, and 8.5 weeks in Germany (Ibid). The studies also show that while there is consistent learning loss for primary school students, this is not the case for secondary and higher education students.

In addition to the losses in educational opportunity just described, there may be some silver linings resulting from this global education calamity. The first is that the interruption of schooling made visible how important teachers and schools are to support learning, and how many other activities depend on the ability of schools to carry out their role effectively. As teachers had to depend on parents to support students in learning more than is habitual under regular circumstances, this may have created valuable opportunities for mutual recognition between teachers and parents. As each of these groups is now more cognizant of what the other does, perhaps they

have learned to collaborate more effectively. Increased parental involvement in the education of their children may have also strengthened important bonds and further developed parenting skills. For some children, it is possible that the freedom from the routines and constraints of schools, and from some of the social pressures resulting from interaction with peers, may have provided opportunities to learn independently and for greater focus, depth, and reflection.

The emergency also made visible the importance of attending to the emotional well-being of students and showed that integrating this as part of the work of schools is not only intrinsically valuable, but also part and parcel of a good education. In attempting to provide emotional support to students, teachers also had to re-prioritize the curriculum, engaging in a valuable exercise of rethinking what is truly important for students to learn. Facing the challenge of reprioritizing the curriculum, some countries embarked on a process of revision for the long haul.

For instance, the South African Directorate of Basic Education has taken a multi-pronged approach to address this complex set of issues. Two such approaches include (1) A short-term—3 year—education recovery plan in response to COVID-19, to address learning loss, and (2) A medium to long-term curriculum modernization plan (2024 onward), aimed at addressing the issue of curriculum relevance and preparing learners for the fast-changing world. The Directorate of Basic Education is working with the National Education Collaboration Trust (NECT) to establish a Competency-Infused Curriculum Task Team (CICTT) mandated to conceptualize and provide a set of policy and implementation recommendations for a modernized curriculum (Eadie et al., 2021).

Creating alternative forms of education delivery during the emergency provided an opportunity for innovation and creativity, an opportunity that many teachers took up, demonstrating outstanding professionalism. The organizational conditions which unleashed such creativity and professionalism need to be better understood, as they may represent a valuable dividend generated by this pandemic, which could be usefully carried forward into the future.

## 1.9 Methods

To contribute to this book, in July of 2020 I invited colleagues from fifteen educational institutions, the majority of whom are university-based researchers in a variety of countries reflecting various regions of the world and varied education systems in terms of the salient challenges facing those systems and the levels of education spending across them. We agreed to conduct case studies that would analyze available empirical evidence to address the questions below. The case studies were conducted between August of 2020 and January of 2021. We then met at a virtual conference in February of 2021 to discuss the draft chapters, and then finalized them by April of 2021 based on feedback received from other contributors to the project.

1. When did the COVID-19 pandemic reach national attention in the country? Is there a specific date when the government declared a national COVID-19 emergency? What educational policies followed that declaration? Was attendance to school suspended? Where in the school year did this happen –was it the beginning of the school year, the middle or the end?
2. What policy responses were adopted at various stages during the pandemic to sustain educational opportunity? Were there alternative means of education delivery created? Was the curriculum reprioritized? Were platforms for online learning created? Educational radio? Television? Were there special efforts to support the education of marginalized students?
3. What is known about the impact of the pandemic on educational opportunities in the country, for different groups of students? Is there evidence on the degree to which children remained enrolled in school, engaged in their studies, learning?
4. Are there any educational positive effects of the pandemic? Any silver linings? Lessons learned that would be of benefit to education in the future.
5. What is known about the effects of the alternative means of delivery put in place, if any?
6. Given current knowledge, what are the likely educational implications of the pandemic?
7. What are the areas in which more research is needed?
8. What are areas that merit policy attention during the remaining period of the pandemic, and beyond?

In addition to a chapter with a global focus, and a chapter comparatively examining five OECD countries, the book includes chapters focusing on Brazil, Finland, Japan, Mexico, Norway, Portugal, Russia, Singapore, Spain, South Africa, and the United States. A concluding chapter discusses some of the threads running through the cases and the implications of the findings.

What follows is a rich and complex story. While most children of the world experienced some form of educational interruption, the extent and depth varied among countries and among groups of children. Understanding the details of how education systems were more able to preserve educational opportunity for some children and in some countries is crucial to discern what was lost, what lies ahead, and what we can expect from schools as institutions that can build a future that is better than the present or the past.

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**Fernando M. Reimers** is the Ford Foundation Professor of the Practice of International Education and Director of the Global Education Innovation Initiative and of the International Education Policy Masters Program at Harvard University. An expert in the field of Global Education, his research and teaching focus on understanding how to educate children and youth so they can thrive in the 21st century. He is a member of UNESCO’s high-level commission on the Futures of Education.

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## Chapter 2

# Experiences with Risk-Management and Remote Learning During the COVID-19 Pandemic in Brazil: Crises, Destitutions, and (Possible) Resolutions



**Claudia Costin and Allan Coutinho**

**Abstract** The chapter examines the difficult conditions under which states, and municipalities had to struggle to ensure learning continued during the social isolation demanded by the COVID-19 crisis in the country. Although it seemed reasonable to expect that the Federal government would respect the constitution and coordinate the educational response to the pandemic, that simply did not happen. The Minister of Education did not consider that such a responsibility should be carried out at the federal level. In the absence of leadership from the central government, the two organizations that congregate subnational secretaries decided to support their members and promote the exchange of practices, with some support from civil society organizations. Through the think tank established by the senior author of this chapter at a private university, CEIPE- Center for Excellence and Innovation in Education Policies, at the Getúlio Vargas Foundation, she participated in this effort, mentoring state and municipal level secretaries in their efforts to provide distance learning through a combination of media, such as TV, radio, and digital platforms. The chapter includes her own anecdotal observations of this national effort, drawing on interviews with secretaries and their teams as well as documents related to the experience as the evidence basis of the chapter. Unfortunately, this is not a story of triumph, since Brazil has been one of the countries with more months of schools being completely or partially closed. In addition to the ineffective approach to fighting the disease, which made Brazil's rate of infection and deaths much worse than many countries in Latin America, the fact that mayoral elections coincided with COVID-19, introduced political reasons for schools to remain closed. The final part of the chapter draws lessons learned and discusses future possibilities for the future of education in Brazil.

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C. Costin (✉) · A. Coutinho  
Getulio Vargas Foundation, Rio de Janeiro, Brazil  
e-mail: [claudia.costin@fgv.br](mailto:claudia.costin@fgv.br)

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## 2.1 Introduction

Policymakers all over the world have perceived education as a volatile, uncertain, complex, and ambiguous enterprise (See, for example, Fadel et al., 2015; Laukkoren et al., 2018), for education cannot be detached from the broader conversations and multifaceted developments driven by cultural, economic, and technological revolutions. Likewise, in both the Global North and the Global South, *uncertainty* has become a vernacular of development, risk-management constituting the compass through which governments and organizations prevent unforeseeable shocks and mitigate systemic and unexpected threats (World Bank, 2014, pp. 11–13). Despite acceptance that the human race has entered unprecedented territory and accepted education as a complex enterprise, it has become clear that risk-management has not been fully embraced to confront unforeseeable crises, such as the COVID-19 pandemic. These risk-management tenets have tremendous implications for policy-making in education and non-education spaces alike; risk management encompasses the promotion of social insurance, coping and protection mechanisms, the spread of reliable information, as well as decreasing losses resulting from disturbances in the education sector and beyond (World Bank, 2014, p. 13). The surge of the COVID-19 pandemic and the disruptions that it has caused for educational systems have indeed become a wake-up-call, not only in terms of the work that *needed* to be done for risk-prevention, but for the work that lays ahead as we create effective learning conditions for students who have been historically positioned in the margins, through policy and practice, in a post-pandemic world.

In the context of the Global South Brazil stands as one of the countries in Latin America that has had one of the least systematic responses to the pandemic, prioritizing economic activity over preventive measures, gridlocked by political turmoil while relying on subnational levels of government to lead the efforts to combat the pandemic (Mello, 2020a; World Bank, 2020a, p. 37). Having the opportunity to learn from the experiences of other countries, such as China and Italy, which had already been impacted by first-wave infections by the end of February 2020 (Plümper & Neumayer, 2020), the federal government in Brazil was reluctant to take preventive measures to contain the spread of the virus and support local educational systems to deal with novel situations and deep uncertainties, as well as cope with systemic crises. This chapter provides a description of such developments between March 2020 and January 2021, and highlights the complementary roles of civil society organizations, the private sector, and the international community in strengthening risk-management to promote learning during school closures in Brazil. It also highlights the role of the state/public sector in advancing formal mechanisms to ensure that efforts aligned with the Sustainable Development Goal (SDG) number 4 are sustained to promote quality and equity in education—the promotion of equal opportunities across several dimensions of diversity such as gender, sex, race, ethnicity, etc.

Written in a chronological order, this chapter is structured in three major sections. In the first section, titled “Education and its discontents with COVID-19 in Brazil,” we set the context examining policy, distance learning, curriculum, and teaching.

We briefly describe the governance structure of the Brazilian educational systems, as delineated by the 1988 Brazilian constitution and the 1996 National Education Law (*Lei de Diretrizes e Bases da Educação*, or LDB) and portray the political milieu that has driven policy decisions pertaining to curriculum and teaching at national and subnational levels, starting in March 2020 up to July 2020. To further qualify the discussions, Claudia Costin, the senior author, the Director of the Center for Excellence and Innovation in Education Policies (CEIPE), includes her own anecdotal reflections on the national effort drawing on her mentoring experiences with state and municipal secretaries of education as they began to provide distance learning through a combination of media channels such as TV, radio, and digital platforms. In the second section, titled “The variance of responses against COVID-19,” we synthesize data from qualitative and mixed methods research gathered by not-for-profit, civil society, government, and private organizations in Brazil, especially from July 2020 onwards, to shed light on stakeholders’ perspectives on such policy responses with a focus on equity. In this section, we also underscore the growing tensions raised in the second semester of 2020 when certain subnational levels of government attempted to gradually reopen schools. We argue that the shocks on the educational system caused by COVID-19 have (and will) inequitably hinder growth and development in Brazil. Finally, in the concluding section titled “Planting seeds of hope in shaken terrain,” we briefly elaborate on steps that can help the country advance its development agenda in times of recovery.

In this chapter, we provide insights for educational policy formulation and research by considering risk-management tenets while considering the colonial histories of a nation-state such as Brazil. Until very recently, race was absent in discussions about social policy in the country (Todaro & Smith, 2015, p. 34; Reid, 2014, p. 181), but this is rapidly changing due to heinous acts of violence against Black and Indigenous communities in Brazil and abroad. This has raised awareness about discrimination and further galvanized public action from long-standing, anti-racist grassroots movements, as well as organizations which now have become even more active in questioning and addressing the roots of systemic oppression (See, for example, Cruz & Vicente, 2020; Instituto Unibanco, 2020; Westin, 2020; Kim Abe, 2020). We write this essay attuned to these pivotal developments and provide insights about educational policy with an intersectional lens, not only to promote social justice in a very unequal landscape such as Brazil, but also as a *sine qua non* of discourses on development focused on freedom (Sen, 1999). Given the scope of this book and space constraints, this chapter is a synopsis of both struggles and successes in delivering educational opportunities during these unprecedented times in Brazil.

## **2.2 Education and Its Discontents with COVID-19 in Brazil: When the Wave of Uncertainty Hits the Hardest, Risk-Management Needs to Be in Place**

Brazil is home to a complex system of educational governance guided by several laws which determine the shapes and contours of the enterprise. As per the 1988 Brazilian constitution and the 1966 National Education Law (Brazil, 1996), the federal, state, and municipal governments are bestowed divergent yet complementary responsibilities. For example, the federal government, through the Ministry of Education (MEC), has been assigned the responsibility to create a National Plan for Education (*Plano Nacional de Educação*) to set normative guidelines for policymaking at both state and municipal levels, playing a distributive, financial, and advisory role. By the same token, states, and municipalities, through a system of collaboration and with the support from the federal government, have been given the authority to offer compulsory education for all, from early childhood to upper secondary education. In this capacity, municipalities offer early childhood education, primary and lower secondary education (in the International Standard Classification of Education, levels 0, 1 and 2), whereas state governments become responsible to offer lower and, most importantly, upper secondary education (in the International Standard Classification of Education, 2 and 3). Meanwhile, the federal government became primarily responsible to offer tertiary education. With 26 states, a Federal District, and 5,568 municipalities, coherence is paramount to provide resources and sustain equitable learning at all levels of education and to advance the Sustainable Development agenda proposed by the United Nations. After all, educational processes are a complex enterprise, especially in a federation; it requires systematic management strategies among federal and subnational government spheres to plan for a robust national strategy for education, one which can overcome structural barriers and administering unforeseeable shocks.

Despite evidence that collaboration among national and subnational levels governments can bring positive educational outcomes in a federation such as Brazil (Abrucio et al., 2016; Carnoy et al., 2017; World Bank, 2017, p. 5; Loureiro et al., 2020, pp. 9–11), cooperation between federal and subnational systems has deteriorated as new waves of uncertainty brought by the COVID-19 pandemic materialized. The major newspapers in the country began to spread information about the new virus back in January 2020 (Folha de São Paulo, 2020) when the world started to learn about the public health situation in Wuhan, China. By the end of February 2020, other nations in Europe had already begun to experience first-wave infections. Brazil, on the other hand, started to report its first cases consisting of upper-middle class travelers who had visited European countries and had been exposed to the new virus (Pescarini et al., 2020; Oliveira, 2020; Ministry of Health, 2020a). In the beginning of March, the World Health Organization (WHO) classified the outbreak as a global pandemic. Concerns regarding community transmission among the most vulnerable—particularly people living in remote regions or in the slums of Brazil who would not have the basic means (e.g., water and soap) to protect themselves and their families—gained

prevalence in the country (Ribeiro, 2020). Contrary to the upper-middle class, who had access to basic sanitary goods and enjoyed greater mobility due to lower household densities while abiding to social distancing measures, lower-income households struggled to follow risk-management procedures determined by health authorities.

For example, in the city of Rio de Janeiro, the household density in the dwelling *favelas* is greater compared to affluent regions (Rio de Janeiro Prefecture, 2016; Observatório SEBRAE, 2015). Despite advancements with social policies such as *Bolsa Família*, a conditional cash transfer (CCT) program highly esteemed by the international community (Lindert et al, 2007), the vacuum of government authority, political interference, corruption, and large-scale bureaucracy, among other commonly perceived iterative elements of ineffective-governance, continued to sabotage the development of the country in the education sector and beyond (See, for example, Akhtari et al., 2014; Saunders, 2016; Lisboa & Latif, 2013; Machoski & Araujo, 2020). With a Gini coefficient of 0,6391 (Ministry of Health, 2010)—an aggregate numerical measure which portrays income inequality in a scale of 0 to 1, from perfect equality to perfect inequality, respectively—the degree of inequality is still a conspicuous feature of the intersectional social fabric of the city across different dimensions of diversity including race, sex, and gender. These discrepancies are also representative of the national landscape, evident not only in terms of relative income disparities across several dimensions of diversity, but also in relation to other human development indicators such as the Inequality-adjusted Human Development Index (IHDI) and the Gender Inequality Index (GII) (UNDP, 2018). Predictably, the population positioned at the periphery, mostly composed of People of Color and Indigenous peoples, would be impacted the most by the COVID-19 pandemic, thus exacerbating historical inequalities in Brazil.

Public outcry targeted at such systemic and intersectional inequalities, as well as concerns with the fate of an already collapsing economy before the global pandemic, led the federal government to issue a decree on March 18th, 2020 to establish a state of calamity in Brazil. Between March 17th and March 18th, the Ministry of Education (MEC) released its first official statements concerning the pandemic: (i) an ordinance (ordinance n° 343) permitting the employment of distance learning at scale in tertiary institutions throughout the course of the pandemic (Brazil, 2020) and (ii) a media release providing advice to post-graduate students who studied abroad on national scholarships about financial matters and travel restrictions (MEC, 2020a). By March 20th, 2020, the federal decree was approved on the floor of the Senate, in its first online session, thus uplifting public health expenditure restrictions to contain the spread of the virus and combat the economic and social effects of the pandemic nationwide (Planalto, 2020). By the same token, state and municipal governments started to enact decrees of calamity and emergency which impacted both public and private spheres, including the educational sector, which had recently started the school year. Each state in Brazil, followed by municipalities, enacted measures to prevent the spread of the new virus. In Table 1 of the Appendix, we provide a list of the first decrees and normative measures enacted by every state in Brazil, including the Federal District. Within 10 days, between March 14th and March 23rd, in the first stage of the pandemic, all states in Brazil issued legislative and normative

measures to close public and private schools. Most subnational levels of government optimistically determined that schools would be closed for a period of 15 or 30 days and that these days would later supplant the mid-year school vacation, thus preventing major disruptions in the school calendar.

### 2.3 The Loss of Instructional Time and the Sense of Urgency to Mitigate COVID-19 Shocks

According to a study conducted by Barbara Bruns and Javier Luque, Brazil already loses approximately one day of weekly class instruction due to classroom management issues, dysfunctional relational dynamics in classrooms, etc. (Brunns & Luque, 2014). Understanding the importance of *learning* for economic participation and as one dimension of/for citizenship,<sup>1</sup> as well as the positive correlations between teacher quality, curriculum, instruction and learning (e.g. Darling-Hammond, 2000; Morshed et al., 2010; Blömeke et al., 2016), concerns regarding the status of these levers of change have grown in policy circles across Brazil, especially after results from national and international evaluations such as the Programme for International Student Assessment (PISA) have become available (Reid, 2014, pp. 175–178). One would imagine that such concerns would drive the response to the pandemic, as a matter of urgency, in our national agenda, for continuity of learning can be decisive in promoting better opportunities for students placed at-risk under systems of oppression and dispossession. However, under the presidency of Jair Bolsonaro, the Minister of Education (MEC) Abraham Weintraub shirked responsibilities to coordinate the

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<sup>1</sup> Conceptions of citizenship are various (e.g. critical citizenship, global citizenship, wait-citizenship) and arguably determined (See, for example, Andreotti, 2006; Reimers, 2016; Bellino, 2018). Yet, despite a plethora of conceptions, *learning*—commonly perceived as the acquirement, development and honing of skills, knowledge and dispositions—constitutes a *dimension* of/for citizenship across various discourses. What seemingly differs among various discourses is whether and how learning is linked *and* positioned in relation to other dimensions of citizenship such as agency, and how it is located in relation to other expected processes and outcomes of education (See, for example, Pinar, 2019, for a critical discussion on curriculum and the site of education). The authors recognize that learning, be it primarily linked to economic participation or not, constitutes a dimension of/for citizenship in knowledge economies—as a means to civic and economic participation, integration, recognition, etc. As such, learning *can* promote human dignity and freedoms, at least within certain parameters: as long as (i) such learning is equitably distributed across intersectional spectrums of diversity, taking into account unjust systems of (re)distribution, and (ii) *not* used as a justification to promote deficit-thinking discourses about specific identities and populations (For a historical discussion on deficit-thinking in the global-north context, see Valencia, 1997).

national response against COVID-19 in the educational sector.<sup>2</sup> His approach undermined risk-management sharing among key development actors and left a vacuum which had to be immediately filled to overcome prevailing losses with the interruption of schooling activities. Subnational levels of government—strongly represented by organizations such as the Brazilian Council of Educational Secretaries (CONSED) and the National Union of Municipal Directors of Education (UNDIME)—with the aid of civil society organizations, the private sector, and the international community, began to join efforts to strengthen risk-management strategies to combat food insecurity and prevent learning disruptions throughout the course of the pandemic. Through uniting, they worked with celerity to deliver services at scale so that every student could at least have access to *some* form of distance education, a proxy for face-to-face learning, *and* conditions to feed themselves—basic rights which are considered pivotal constituent components of development as freedom in a democracy.

Alarmed at the developments in Brazil and abroad, the director of CEIPE-FGV, Claudia Costin, one of the authors of this chapter, began to work with her team to support secretaries of education to minimize the shocks originated from school closures while observing international responses to the pandemic. One of the major goals of CEIPE-FGV is to prepare leadership to address the most pernicious issues in the educational sector of Brazil (CEIPE-FGV, 2020), from shifting the usual “crisis-fighter” approach to management in education to a sustained, proactive, and systematic risk approach to leadership—one which (i) understands the contextually regulative, normative, cultural-cognitive and racial dimensions/dynamics of institutional reforms and which (ii) acts upon these dimensions, in collaboration with other development actors, to plan and promote quality and equitable learning beyond one’s four-year electoral tenure, at all levels of education. Fundação Getulio Vargas (FGV), the tertiary institution that houses the organization, has also been proactive in supporting the spread of reliable information and resources to aid the response to

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<sup>2</sup> Abraham Weintraub held office as Minister of Education from April 9th, 2020, to June 19th, 2020. His administration became the target of scathing criticisms from educational pundits and policymakers after controversial statements and ineffective management strategies (Alvarenga & Parreira, 2020a; b). Although the Ministry of Education convened, on March 2020, during the first stage of the pandemic, with the Brazilian Council of Educational Secretariats (CONSED) and the National Union of Municipal Directors of Education (UNDIME) to discuss the flexibilization of the 200 school-day calendar, a standard established by LDB, as well as the maximum workload offered in distance education (MEC, 2020b), coordination seemed elusive and policies incongruent with the social landscape of Brazil. For example, the Minister of Education was reluctant to postpone the Brazilian National High School Evaluation (ENEM) (Vieira, 2020)—a compulsory standardized exam of students’ knowledge and skills which serves as a classificatory tool for college entrance nationwide—despite the inequities that this would cause given the divergent learning conditions offered to different populations of learners across the nation. Concerned with the status of the response to the pandemic, the National Education Counsel (CNE)—an autonomous advisory body within MEC mostly composed of appointed scholars and educational specialists—issued an opinion on April 28th, 2020 (CNE, Opinion n° 5/2020), after a period of public consultation and in accordance with the federal provisional measure n° 934 of April 1st, 2020. Partially ratified by the Minister, the CNE’s opinion addressed questions pertaining to the organization of the school calendar and the possibility of including non face-to-face classroom activities in order to comply with the minimum annual workload established by national legislation.

the pandemic (Costin et al., Forthcoming). At CEIPE-FGV, Costin has personally mentored fifty-three secretaries of education—fifty municipal level secretaries and three state level secretaries—and has worked closely with them to respond to distinct crises and shocks before and during the pandemic.

Institutionally, CEIPE-FGV has compiled and translated documents to share reliable information and practices from national and international educational systems while accounting for intricacies of local context, and promoted several webinars with the support of *Instituto República* (<https://republica.org>) to aid the response of secretaries of education across Brazil (e.g. Costin, 2020a; Melnick & Darling-Hammond 2020; FGV, 2020). Practically, all involved in this work at CEIPE-FGV were cognizant that knowledge-sharing was just one side of a complex web of strategies to strengthen risk-management, avoid dropouts, and promote learning in adversity. After all, several structural barriers such as lack of internet connectivity in households and teacher preparedness (e.g., the extent to which teachers feel comfortable/trained to use technology) could jeopardize the response to the pandemic. Indeed, data collected prior to the pandemic highlighted, for example, (i) discrepancies between households with internet access in urban versus rural areas (70% vs. 44%, respectively) (CETIC, 2019), and (ii) a large percentage of teachers (60–70%) who felt a high need to hone skills in Information and Communication Technology (ICT) (World Bank, 2020b, p. 112). These were simple statistics that depicted a tiny proportion of the challenges that we would face in sustaining education opportunities across diverse communities throughout the course of the pandemic in Brazil, but a reality which could have not prevented leaders from acting.

## **2.4 New Means of Instruction and Curriculum Reprioritization in the COVID-19 Context**

As the end of the first two weeks of lockdown neared, awareness spread that the pandemic would last for as long as a vaccine would be made available, all states and municipalities started to issue other decrees and normative measures to expand the period of school closures. As a result, subnational governments and development organizations from several sectors began to rethink (i) the means of instruction, advocating for mixed approaches to teaching and learning at different stages of education and, consequently, (ii) the scope and delivery of the formal curriculum in the COVID-19 context, as well as (iii) preemptive strategies to facilitate the restoration of face-to-face classes. From the outset, one of the first measures was to evaluate which resources subnational governments had at their disposal (e.g., online platforms, radio and TV channels, capabilities to support the delivery of lessons and homework, etc.), or which assets they could allocate to either create or strengthen these systems of coping and protection to ensure that education would not be interrupted in a state of calamity. Such concerns were paramount to discussions concerning mitigation and educational opportunity in the second stage of our response to the COVID-19



pandemic during April, May, and June 2020. At CEIPE-FGV, speaking with secretaries of education in our mentorship program, we began to think strategically about how educational systems could combine different modes of delivery and instruction to ensure that losses would be mitigated, especially at crucial stages of human development (e.g., during the first years of ISCED level 1 when children learn and hone their literacy skills, and in the last year of ISCED level 3 when youth begin to transition to tertiary education). We also evaluated how to maintain the supply of school lunches by giving staple basic products to families, etc. Moreover, we promoted communication amongst stakeholders, engaging secretaries to support teachers in their professional development and encouraging them to connect to parents via telephone and social media using apps such as WhatsApp and Instagram, with special attention to households that had children with special educational needs.

For instance, in the city of Boa Vista, the capital of the state of Roraima, Brazil, the vice-mayor and secretary of education, Arthur Henrique, was already responding to unforeseeable developments in the educational sector as a result of a humanitarian crisis in Venezuela, receiving immigrants from our neighboring country and adopting measures to make their transition to Brazil less traumatic (e.g. elaborating and applying examinations in Spanish so that learning could be sustained and immigrants' identities maintained) (Costin, 2020b). The COVID-19 pandemic exacerbated risks in several dimensions, especially the social and emotional, which are the basis of a holistic education and key factors for human flourishing. Mitigating additional hindrances caused by the pandemic, the secretary consulted teachers, who had already begun to propose activities to students, and created a new system wide initiative called "Boa Vista Learns at Home" (*Boa Vista Aprendendo em Casa*). The secretary designed and offered a formal, malleable curriculum that could be adapted by teachers while prioritizing key knowledge and skills aligned with Brazil's National Common Core, translating it into lesson plans and sharing these resources via Instagram (<https://www.instagram.com/aprendendoemcasabv/?hl=en>) and WhatsApp (Chaves, 2020).

Based on the premise that through new channels of delivery the full scope of the formal curriculum could no longer be achieved, that educational experience would be circumscribed; policymakers and educators began to take stock of a new form of curriculum-as-plan. Brazil has very recently designed, approved, and begun to implement its first National Common Core, BNCC (*Base Nacional Comum Curricular*) making it a norm that all children across all dimensions of diversity in all regions of Brazil enjoy the same learning rights while respecting the intricacies of local context (for more information regarding the curriculum reform, see Costin & Pontual, 2020). This has been an ambitious reform focused on equity and learning, operated within the parameters proposed by the Organization for Economic Co-operation and Development (OECD) in its competence-based framework. The COVID-19 pandemic brought ambiguity to how our formal curriculum would be executed in an unanticipated context—at all levels of compulsory education and under considerable time and structural constraints. In this context, *curriculum flexibilization* and *prioritization* became the terminology that guided the translation of BNCC expectations into *COVID-19 contextual learning priorities* in the city of Boa Vista and beyond.



Indeed, at the national level, the ongoing curriculum question “What knowledge is of most worth” became even more accentuated as curriculum specialists continued to grapple with the task of prioritizing knowledge and curricular content while facing a global health crisis. At that time, the Brazilian not-for-profit organization, *Instituto Reúna* (<https://institutoreuna.org.br>), noticing disparities between BNCC’s high expectations and the knowledge possessed by students, had already begun to design “learning maps” aligned with BNCC’s learning rights (<https://institutoreuna.org.br/projeto/mapas-de-foco-bncc/>). Departing from a behavioral, knowledge-based approach and from a contextual diagnosis of students’ capabilities, these “learning maps” would serve as compass to help leaders, pedagogical coordinators and teachers reprioritize their formal curricula by connecting specific knowledge and skills across areas of knowledge (e.g., Languages and Sciences) and levels of education (ISCED level 2 and 3). These “learning maps” differentiated learning in three categories: ‘focal,’ ‘complementary’ and ‘expectations for fluency,’ the latter only available in the curricula components of Portuguese and Mathematics. The ‘focal learning’ is considered non-negotiable, deemed necessary for the development of the child (e.g., skills related to literacy development and writing), whereas learning in the ‘complementary’ and ‘fluency’ domains offer opportunities for further development and mastery, the latter representing a stage where students mobilize ‘objects of knowledge’ and ‘skills’ paramount for a specific level of education (Casagrande, 2020). Utilizing this method, educational systems are then supported to select and design curriculum content, didactic material, sequences, and lesson plans, as well as consider appropriate evaluation methods by considering their contextual needs during COVID-19. These “learning maps” have also been promoted by CONSED and UNDIME, institutions that galvanized cooperation from public, private, supranational and philanthropic organizations, including a research center at a public university, the Center for Public Policies and Evaluation in the Federal University of Juiz de Fora (CAEd/UFJF), to create an online platform titled “Supporting Learning” (Portuguese: *Apoio à Aprendizagem*) available at <https://apoioaaprendizagem.caeddigital.net/#!/pagina-inicial>. Over seven thousand users have accessed this platform, which has offered resources, including *Instituto Reúna*’s learning maps, to guide mitigation strategies throughout the course of the pandemic, including resources for when face-to-face classes resume.

## 2.5 The Variance of Responses Against COVID-19 and the Waning of Learning and Participation

At that stage in our response to mitigate COVID-19, when subnational levels of government had already begun to implement their coping strategies, a need to understand the variance of responses in the educational sector arose to qualify policy deliberations. Several organizations started to collect data from multiple stakeholders—education secretaries, students, parents, and teachers—from March 2020

onwards, thus facilitating discussions about risk-management, equity, and learning. The research available provided some encouraging information, but it also highlighted woeful discrepancies regarding risk-management strategies that aimed to sustain educational opportunity and wellness across Brazil, concerns directly related to the United Nations' 2030 Sustainable Development agenda. For example, the research project "Education Cannot Wait"—See second table in the Appendix where we synthesize data from some of these research initiatives—indicated that 93% of municipal respondents had aligned their pedagogical interventions with BNCC's learning rights, thus preventing further delays to translate BNCC's orientations into pedagogical interventions once face-to-face classes resume. Regarding discrepancies, the research projects "Feelings and Perceptions of Brazilian Teachers" and "Youth and the COVID-19 Pandemic" highlighted a percentage difference, albeit not from representative samples, between male and female respondents regarding their perceptions on wellness, which can raise several hypotheses about gender disparities. Moreover, the research project "Education Cannot Wait" and "Distance Education, Wave 1" underscored regional incongruencies regarding *access to formal education in the COVID-19 context*. In some cases, municipalities could employ in-place mechanisms to cope and sustain educational opportunity. There were also cases where municipalities mobilized new resources to implement brand new strategies. For instance, in the city of Senador Canedo in the state of Goiás, in addition to using YouTube and radio channels to offer distance education, the department handed out USB drives with pre-loaded activities to students who had computers at home, but no access to the internet. The department also created its own online domain (<http://www.semecsenadorcanedo.com.br>) to share information with stakeholders throughout the course of the pandemic and registered students and teachers in Google classroom (Faria et al., 2020, pp. 9–10).

The research project "Education Cannot Wait" pointed out that opportunities for access were indeed greater in the South and Southeast regions of Brazil among municipalities that had participated in the survey. This finding is interesting because it aligns with the data provided by the World Bank in its index of "student vulnerability" to school closures (World Bank, 2020b, p. 113). The construct of "vulnerability" has been calculated based on five variables— (i) availability of meals at school, (ii) usage of technology by educators in classrooms, (iii) family engagement, (iv) number of students who work, and (v) past dropouts—and indicates vulnerability from 0 to 1, from less vulnerable to critically vulnerable, respectively (World Bank, 2020b, p. 113). Only one state from the North/Northeast regions was represented in the group of six states, plus the Federal District, positioned below the national average (0,495) in student vulnerability. Conversely, all states positioned towards the tip of the curve in "critical vulnerability" were represented by states in the North/Northeast regions. These statistics demonstrate a historical fact regarding states' and municipalities' divergent regional capacities to offer educational opportunity in Brazil—a deed which encouraged federal and subnational levels of government to create and maintain the Primary and Secondary Education Maintenance and Development Fund (FUNDEB), a collective financial mechanism that amasses resources amongst subnational levels of government to subsequently share them with contributors based on

their weighted number of students across different levels of education, from ISCED level 0 to ISCED level 5 (Todos Pela Educação, 2020).

Regional disparities are important in denouncing equity disparities in the country. Like analyses that link zip codes to poverty indexes, these statistics demonstrate that privileges rather than rights have constituted the making of democratic Brazil, that unearned advantages continue to travel across space to offer better opportunities to some segments of the population. However, despite its relevance, such statistics can only denounce a facet of inequality; statistics can only tell so much about the *face* of injustice because they lack a human dimension. In fact, these statistics alone can end up shifting the focus from pivotal constitutive dimensions of oppression, while bolstering discourses that are color-blind and fail to denounce disparities across dimensions of diversity. Most often, they have the capacity to hide the societal engineering that has shaped Brazilian culture and the historical forces that have fabricated lives, such as the deep, troubling colonial histories that forged the making of democratic Brazil (See Ribeiro, 2000, for a historical analysis concerning the formation of Brazil). Thus, in verifying whether equity constitutes the foundation of an educational system and whether freedoms constitute the core of development, we find it pivotal to view data through an intersectional lens to understand how different dimensions of diversity (such as race, class, and gender) come together to enact different kinds of privileges and levels of freedoms in our democracy.

In this regard, the Brazilian Institute of Geography and Statistics (IBGE) conducted a pivotal initiative during the first stages of the pandemic by collecting household data via phone calls on a monthly basis, from May to November, as part of its National Household Sample Survey (Pnad), available at <https://COVID19.ibge.gov.br/pnad-COVID/>. Aiming to estimate the number of people with COVID-19 symptoms and quantify some of the impacts on the labor market (IBGE, 2020a), the applied questionnaire of July–October 2020 collected information regarding individuals' gender, ethnicity, age, etc. It also provided data regarding school/university enrollments and whether individuals had been offered any form of distance education activity (e.g., online classes and homework) during the first stages of the response to the pandemic (IBGE, 2020b). This data provides a glimpse of how lives are differently (re)produced in contexts where “rights” are sustained for a few; it shows important disparities between those who had been granted access to formal education during the pandemic—in this case, offered some form of distance education—and those who did not.

The Research and Training Nucleus on Race, Gender and Social Justice of the Brazilian Center for Analysis and Planning (Afro-CEBRAP), one of the first organizations to draft reports using Pnad COVID-19 data, highlighted that the proportion of the population of non-White students (Black, Brown and Indigenous people) who participated in educational activities in June 2020, was extremely low compared to the White student population (White and people of Asian descent) across all regions of Brazil, in addition to disparities in internet access, health insurance, etc. (See Prates, 2020; Lima et al., 2020; Venturini et al., 2020). This information corroborates recent research that suggested that structural barriers *and* biases/prejudices against communities of color have shaped the lives of these individuals in classrooms

and beyond. For example, these structural factors have affected the performance of Black students in the Brazilian Basic Education Evaluation System (SAEB) (Iede, 2020) and increased the likelihood of getting infected and dying by COVID-19 in Brazil (Baqui et al., 2020). Indigenous communities have also been greatly impacted by COVID-19 (Dias & Leonel, 2020). The new virus has become an imminent risk to elders—the “guardians of memory” (Bergamaschi & Medeiros, 2010, p. 63) responsible to transmit wisdom and knowledge across generations—and, consequently, a threat to traditional knowledge and Indigenous education (Milhorance, 2020).

## 2.6 The Attempt to Gradually Reopen Schools to Avoid Further Losses: The Contentious Site of Education

With growing concerns about intersectional and generational disparities, in the last semester of 2020, from July onwards, some decision makers became more attuned to global developments as international data regarding school openings circulated within policy circles. At that time, the OECD had released its *Education at a Glance* report comparing the loss of instructional time between OECD and partner countries. The duration of school closures ranged from 7 to 19 weeks, with Brazil falling in a runner-up position with a total of 16 weeks of closure (OECD, 2020, p. 359), a fact that raised concerns about students’ mental health and their ability to continue participating in formal education. By the same token, Brazilian organizations also collected and shared data concerning decisions to reopen schools in several countries while observing health mandates in both Global North and South contexts, reporting whether COVID-19 infections increased, decreased, or remained constant as a function of schools’ decisions to reopen (See, for example, Vozes da Educação, 2020). Unfortunately, however, the amount of reliable information shared with stakeholders did not seem to match the rate of coordination or the rate in which new educational policies were implemented to circumvent the loss of instructional time.

Without national coordination in a decentralized system and engulfed by contentious discourses that either lambasted or praised those who advocated for the implementation of sustainable plans to reopen schools and safeguard educational opportunity, the country maintained a stark, heterogeneous response to the pandemic. According to a survey distributed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in that same period, some states had begun to plan to gradually reopen schools by (i) designing a calendar to allow different groups of students to attend face-to-face classes on specific days; (ii) creating school shifts opposite to regular school hours; and (iii) prioritizing certain levels of education such as Early Childhood Education (ECE) (UNESCO, 2020). By employing these and other programs, educational leaders aimed to sustain educational opportunity, decrease the number of students per class so as not to overcrowd classes in the future and, therefore, decrease the rate of school and out-of-school infections. Notwithstanding, there were also educational systems that had no plans in place to

resume face-to-face classes and offer hybrid education in the new COVID-19 context (UNESCO, 2020).

This heterogeneous response was not, however, only a product of deficient coordination or the fact that different geographic regions experienced divergent rates of infection, but also the result of several opinions that prioritized the short-term benefits of economic activity over the long-term beneficial effects of continued education. Contrary to other educational systems around the world which prioritized schooling and education as a human right, Brazil predominantly chose to facilitate the trade of goods and services by opening not only shopping malls, but also pubs and bars in lieu of schools. This conspicuous trend exposed the status of education in our national agenda in both times of prosperity and risk sharing. Moreover, divergent technical opinions discouraged plans to reopen schools, arguing that such measures would put the health of the population in jeopardy (See, for example, Fiocruz, 2020). Dissonances in public opinion were evident during this period—an estimated 76% of Brazilians adamantly rejected plans to resume face-to-face classes or implement hybrid modes of education (Datafolha & Folha de S. Paulo, 2020). It also incited teachers to advocate for better sanitary and working conditions, as well as call for inclusion in the first group to receive vaccines, whenever these would be made available.<sup>3</sup>

On the one hand, these social developments demanded greater attention from mayors and secretaries of education to democratically engage in public deliberations before enacting any reopening plans, especially considering new municipal elections. On the other hand, they catalyzed seemingly incongruous programs and responses across the country. For example, in the State of São Paulo, the governor issued separate decrees in July and August 2020, decrees 65.016 and 65.061 respectively, authorizing schools to optionally and gradually reopen insofar as state and local health procedures were followed (São Paulo's State Legislative House, 2020a, b). Nevertheless, according to national media outlets, adherence among municipalities in the state were low because of public scrutiny and distrust: as of December 6th, 2020, only 219 out of 645 municipalities joined these efforts (Mello, 2020b). In the city of Rio de Janeiro, another interesting development happened, for the state and the municipality diverged in their normative measures. The city of Rio de Janeiro issued a statement allowing private schools to resume classes optionally and gradually in early August for certain grades of primary and lower secondary education. According to the mayor, this would serve as a trial that would later inform decisions to reopen public schools (Rio de Janeiro Prefecture, 2020). However, public prosecution brought forth a case to the judiciary system against this provision, citing other decrees issued by the state legislature that had promulgated school reopenings to a later date, while alleging that the mayor's decision would be in detriment of the common good: not

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<sup>3</sup> The immunization plan issued by the Ministry of Health in December 2020 initially positioned educators in the fourth category within its priority group, the last category to receive vaccines before ordinary citizens (Ministry of Health, 2020b). Even before the plan was announced, civil society and international organizations as well as other institutions from private and public sectors, including teacher unions, campaigned to include teachers in the first categories of the priority group (See, for example, UNDIME, 2020).

only could it create disparities between private and public systems, but it could also increase the rate of COVID-19 infections (Public Prosecution Office in the State of Rio de Janeiro, 2020a, b). The judiciary system later maintained that private schools would remain closed in the city (Judiciary system in the state of Rio de Janeiro, 2020), a decision that was later overruled by that same judicial system (Castro, 2020).

As the last months of 2020 ended these contentious debates did not cease but rather became a focal point of national debate. For example, in early January, the United Nations Children's Fund (UNICEF) office in Brazil issued a letter to the 5,568 elected mayors pleading for their support to put education first and prioritize reopening plans in their administrative agendas (UNICEF, 2020). These calls were backed up by new research that evaluated the effects of country-wide school closures on learning and the development of knowledge and skills at national and international levels (See, for example, Kuhfeld et al, 2020; Agostinelli et al., 2020). At that time, policymakers had not only information regarding *who* had the most access to schooling activities, but also estimations of how such disparities in access would translate into learning losses. In Brazil specifically, another coalition between a research center at Fundação Getulio Vargas, the Center for Learning on Evaluation and Results for Brazil and Lusophone Africa (FGV EESP Clear), and the Lemann Foundation, a not-for-profit organization that has fostered several education partnerships throughout the years, produced evidence regarding learning losses in the Brazilian context. Using a methodology employed by the World Bank in its report "*Simulating the potential impacts of COVID-19 school closures on schooling and learning outcomes: a set of global estimates*" and retrieving data from SAEB, the researchers estimated significant learning losses for students in lower and upper secondary education. In a worst-case scenario, compared to a typical schooling year, FGV EESP Clear estimated a 72% loss in learning for lower secondary students. In an optimistic scenario, the estimate would constitute a loss of 14%. Similarly, for upper secondary students, the estimates were 72% and 15%, respectively (FGV EESP Clear, 2020, p. 6).

In addition to estimated learning losses, dropouts have also constituted an issue of paramount importance for Brazil: an estimated number of four million students, ages 6–34, abandoned schools in 2020 because of COVID-19 related issues (C6 Bank, 2021). In a country where the opportunity cost of attending schools has been disproportionately high for students at risk, shocks such as this one can seriously alter one's life trajectory. Knowing that dropping out of school can affect students' self-esteem and impose long-term barriers to return to school, these numbers set a concerning path for Brazil and raise a red flag for our recovery strategies. Hence, despite collective efforts, the current systems of social protection and risk management in Brazil have not been sufficient to fully mitigate the wave of uncertainty brought by the COVID-19 pandemic. It has materialized into a tsunami of losses, especially for the most vulnerable, making our quest toward equality of opportunity even more difficult; the road towards emancipation and freedom has been significantly extended for Brazilian citizens.

## 2.7 Planting Seeds of Hope in Shaken Terrain: The Possibilities to Build a Future After a Traumatic Event

As the previous section suggested, the COVID-19 pandemic has exacerbated and will continue to exacerbate historical inequalities which have constituted the making of democratic Brazil. From barriers to access to learning losses, the nation has struggled to ensure that education constitutes a human right rather than a luxury good in the context of the COVID-19 pandemic. Moreover, the new coronavirus has tested the ability of institutions to face adversity and mitigate risks. This ability to confront crises has a direct impact on ordinary citizens' ratings and perceptions of institutions' readiness, malleability, and efficiency. Certainly, the extent to which this pandemic has diminished or increased trust on current governance structures requires further empirical consideration. Nevertheless, not all institutions seem to be able to strengthen risk-management tenets, and we observe important social developments that can be linked to citizens' evaluation of institutional performance. For example, the new Ministry of Education decided to carry out the Brazilian National High School Evaluation (ENEM) in January 2021. ENEM is an extremely important exam, and it represents a rite of passage in Brazil because it serves as a classificatory tool for college entrance nationwide. Originally scheduled for November 2020, the exam was postponed for a few months as a mitigation strategy, which also gave students more time to prepare in the novel COVID-19 context. However, over 50 percent of students who had registered to participate in both in person and online formats did not show up to examination sites in January 2021. Absenteeism was extremely high compared to previous years, in both modes of delivery. Several reasons could have caused this phenomenon, including social fears of getting infected by the new coronavirus *and* general negative social perceptions of institutional capacity to administer this examination in a time of crisis. In a nutshell, COVID-19 tested the ability of institutions to collectively mitigate risks to deliver public goods, affecting social perceptions of institutional performance with implications for social welfare and democracy.

By the same token, the COVID-19 pandemic highlighted the roles of diverse institutions in strengthening risk management. There exists a longstanding debate in Brazil about whether other sectors, other than the public, should play a role in the field of education. This debate must certainly be ongoing in a democracy, and we believe COVID-19 provided an opportunity for people to re-evaluate how diverse sectors can come together to strengthen the response to unforeseeable crises and deliver educational opportunity for all, especially when longstanding institutions face internal dilemmas and crisis of their own. Indeed, rather than substituting or replacing development forces, COVID-19 underscored the importance of relying on several sources to strengthen risk management to mitigate shocks in complementary ways. This global health crisis has created an opportunity to keep this conversation alive, and it has the power to raise awareness and foster novel insights about the complementary ways in which development actors can come together to prevent losses and foster development as freedom.



Besides this opportunity to rethink development, the country has also accumulated several lessons that may inform our recovery agenda in the days to come. For example, in the State of Goiás, the social innovation start-up Movva (<https://movva.tech/en/about/>) incentivized high school students to stay “engaged in distance learning activities (online and offline) and enrolled in school when face-to-face classes resume” (Lichand & Christen, 2020, p. 2). This start-up powered an intervention by sending text messages to over 12,000 high school students over the course of four weeks (Lichand & Christen, 2020, p. 2). The messages contained encouraging statements such as “It is normal to be afraid in times of uncertainty. Use this scenario to your advantage: take the opportunity to develop the ability to focus on your plans for the future” (Lichand & Christen, 2020, p. 11). Undertaking a Randomized Control Trial (RCT) and monitoring student dropouts and their self-reported levels of motivation, researchers were able to claim that this strategy worked to nudge students during the pandemic. For example, only 13.5% of students in the treatment group maintained that they would *not* go back to school when classes resumed, compared to 24% in the control group (Lichand & Christen, 2020, p. 3).

In addition to interventions to prevent school dropouts, Brazil has also advanced its agenda to close the “digital divide,” a historic and distinct feature of our educational landscape (Rosa & Azenha, 2015). Although civil society and other segments felt that the mitigation response from the Ministry of Education was inadequate, the National Congress of Brazil demonstrated a will to support an agenda of development focused on equity. Several congresspeople drafted and approved the bill PL 3477/2020, which has recently been forwarded to the Senate, to ensure that public students and teachers have access to the internet during these unprecedented times (National Congress of Brazil, 2020). Another important and recent development spearheaded by the legislative branch in Brazil, the ratification of the law n° 13.985/2019, may aid our recovery efforts too. This law guarantees the placement of psychologists in Brazilian public schools to support students and educators throughout their entire education. The inclusion of psychologists in schools may help educational institutions in the country become “trauma-informed schools” (Lawson et al., 2019) by supporting learning, facilitating the recognition of shared and individual trauma, and prioritizing the promotion of community healing. This certainly constitutes a key mitigation and recovery strategy, and one which may be highly valued by all segments of society as students and educators return to schools and begin to experience the long-term effects of COVID-19 related traumas. This is also an area that merits research consideration: different populations of students across the various dimensions of diversity might have experienced and accumulated different kinds of traumas throughout the course of the pandemic, such as racial trauma and traumas related to household violence. Designing and evaluating interventions to transform schools into communities of healing, trauma-informed institutions in a post-pandemic world may be of paramount importance for scholars and practitioners who aim to challenge systems of oppression such as racism, sexism, and ableism in our schools to build socially just societies and democracies.

Regarding Indigenous knowledge, the loss caused by COVID-19 cannot be underestimated. For Indigenous and non-Indigenous researchers who work for and with



Indigenous communities, this time also constitutes a delicate moment. In the field of Indigenous research, it would be important to understand how COVID-19 could reinforce historical patterns of disempowerment, potentially undermining reconciliatory efforts between Indigenous and non-Indigenous populations and the state—especially in Brazil, which has hampered sustainable development and positioned Indigenous communities in precarious conflicts of dispossession over the past few years (Santos et al., 2020). Understanding how Indigenous communities perceive these losses, whether and how educational systems will portray these losses to the public over the years, and how this might affect the forging of respectful relationships in democratic Brazil constitute an area of attention for Indigenous research in the field of education.

Similarly, concerning the construction of a new curriculum-as-plan—the bundles of knowledge, skills, and dispositions that students ought to develop and learn through schooling—the pandemic poses opportunities and challenges. As discussed in the main body of this text, curriculum re-prioritization became the terminology that helped Brazilian educational leaders translate learning rights into COVID-19 contextual learning priorities. The development of knowledge and skills is key to expanding freedoms, and so are the timely, complicated conversations that students engage in collectively and independently. Both in and outside of classrooms, student discourse about issues that directly affect their livelihoods, subjective identities, and wellbeing is critical (Pinar, 2019). With constrained learning schedules and additional measures to recover learning losses in a post-pandemic world, understanding how educational leaders, teachers, and other stakeholders negotiate curriculum-as-plan to promote holistic education, and how this negotiation might affect students' educational experiences, the "curriculum-as-lived" (Aoki et al., 2012), constitutes a site for exploration and interrogation. Indeed, the relevance of schooling and its curriculum-as-plan might be intrinsically linked to these decisions and conversations.

Finally, we comment on the question of learning losses itself. To address losses in knowledge and skills in formal schools, remedial programs will likely merit policy attention during the remaining period of the pandemic and beyond. Because the ramifications of COVID-19 have affected all segments of education and created tight budget constraints, a call for scalability will potentially become a feature of such programs. In this scenario, hybrid modes of instruction may become an attractive option for policymakers, notably in lower and upper secondary levels when more mature students could benefit from these interventions. These programs may aid the offering of regular classes once face-to-face classes resume, especially in cases where educational systems provide services through double-shift schools. These programs may allow students to continue acquiring knowledge and honing skills once children finish regular school hours. Additionally, it may circumvent problems related to space constraints since students may not need to stay in classrooms to participate in hybrid programs. It is pivotal that students who have been historically positioned at-risk benefit from social policies that aim to reduce the opportunity cost from participating in such interventions. Cooperation and coordination between education and social assistance sectors can never be underestimated. For scholars, designing and evaluating the effectiveness of these remedial programs will also constitute an

important course of action, for we are now striving to better understand how to institutionalize parameters to mitigate future disruptions and strengthen our risk management systems in a volatile, uncertain, complex, and ambiguous world. Despite a shaken terrain, seeds of hope are being planted, but germination is also contingent upon the kinds of coalitions and knowledge that we foster and gather to nurture the roots of development as freedom in Brazil and beyond.

## Appendix

First measures taken by states in Brazil to reduce the spread of Covid-19 in regards to education activity (1 of 3)

REGION/State	Decree/ Normative instruction	Issue date	Major provisions
<b>NORTHEAST</b> Ceara	Decree n° 33.510	March 16th, 2020	Decreases an emergency health situation and provides for measures to face and contain human infection by the new coronavirus, including the suspension of face-to-face classes for <b>15 days</b> in all schools, universities and colleges, from public education networks. Mandatory from March 19th, this suspension may also start from March 17th, 2020
Rio Grande do Norte	Decree n° 29.524	March 17th, 2020	Provides for temporary measures to deal with the Public Health Emergency situation caused by the new Coronavirus (COVID-19), suspending classroom activities in public and private schools, within the scope of early childhood education, elementary, high school, higher education, technical and professional education, for the initial period of <b>15 days</b>

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REGION/State	Decree/ Normative instruction	Issue date	Major provisions
Maranhao	Decree n° 35.662	March 16th, 2020	Provides for the suspension, for <b>15 days</b> , of face-to-face classes in schools of the state educational network, the State Institute of Education, Science and Technology of Maranhao—IEMA, the State University of Maranhao—UEMA, the State University of Maranhao in the Tocantina Region—UEMASUL, the educational institutions of the municipal networks, as well as in the schools and higher education institutions of the private network located in the State of Maranhao
Piaui	Decree n° 18.884	March 16th, 2020	Regulates Law No. 13,979, of February 6, 2020, to deliberate, within the scope of the State of Piaui, public health emergency measures of international importance taking into account the classification of the new coronavirus as a worldwide pandemic, institutes the Crisis Management Committee, and takes other measures including the suspension, for <b>15 days</b> , of classes in the state public school system, considered by the school calendar as an anticipation of the school break in the month of July
Paraiba	Normative instrument n° 1	March 17th, 2020	Determines the anticipation of school holidays for the entire state public school system, for the period of March 19th, 2020, to April 18th, 2020 ( <b>31 days</b> )

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REGION/State	Decree/ Normative instruction	Issue date	Major provisions
Pernambuco	Decree n° 48.810	March 16th, 2020	Determines, as of March 18th, 2020, the suspension of activities in schools, universities and other educational establishments, public or private, throughout the State of Pernambuco
Bahia	Decree n° 19.529	March 16th, 2020	Regulates, in the State of Bahia, temporary measures to cope with the important public health emergency due to the coronavirus and decrees the suspension of classes for <b>30 days</b> in the state school system of Salvador, Feira de Santana and Porto Seguro
Alagoas	Decree n° 69.527	March 17th, 2020	Institutes temporary measures to deal with the public health emergency of international importance resulting from the covid-19 (coronavirus), within the scope of the public and private education network in the state of Alagoas, and takes other measures, including the suspension of classes for <b>15 days</b> from March 23, 2020 onwards

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REGION/State	Decree/ Normative instruction	Issue date	Major provisions
Sergipe	Decree n° 40.560	March 16th, 2020	Provides for the decree of an emergency situation in public health of the State of Sergipe due to the spread of the virus COVID-19 (new coronavirus) and regulates the measures to combat the public health crisis of international importance, under the terms of the Law (Federal) n° 13,979, of February 6th, 2020, suspending educational activities in all schools, universities and colleges, from public and private education networks, for <b>15 days</b>

First measures taken by states in Brazil to reduce the spread of Covid-19 in regards to education activity (2 of 3)

REGION/State	Decree/ Normative instruction	Issue date	Major provisions
<b>NORTH</b> Amazonas	Decree n° 42.987	March 19th, 2020	Provides for the suspension of classes in the state public school system, for a period of <b>15 days</b> , in all municipalities of the State of Amazonas, as well as activities of fitness centers and the like, and the river transportation of passengers on boats, except in emergency and urgency cases, in the form specified
Acre	Ordinance SEE n° 764	March 18th, 2020	Establishes temporary measures to be adopted by school units, administrative sectors and education centers of the State Secretariat for Education, Culture and Sports, suspending face-to-face classes at school units in the public state educational network <b>until April 3rd, 2020</b>

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REGION/State	Decree/ Normative instruction	Issue date	Major provisions
Amapa	Decree n° 1.377	March 17th, 2020	Provides for temporary measures to prevent the contagion by the new coronavirus (COVID-19) within the scope of the Executive Branch of the State of Amapa, with classes on the state network suspended for a period of <b>15 days</b> from the date of March 18, 2020
Tocantins	Decree n° 6071	March 18th, 2020	Due to the COVID-19 pandemic (new Coronavirus), educational activities in public or private educational establishments based in the State of Tocantins, such as schools and universities, are suspended for an <b>indefinite period</b>
Para	Decree n° 609	March 16th, 2020	Provides for measures to combat, within the State of Para, the pandemic of the corona virus (COVID-19), suspending classes in schools within the state public school system <b>until March 31st, 2020</b> , with school lunch offers maintained
Roraima	Decree n° 28.587-E	March 17th, 2020	Provides for measures to deal with the Public Health emergency of international importance resulting from the Covid-19 pandemic and elaborates on other measures, including the suspension of classes, within the scope of the Secretary of States for Education, from March 17th to March 31st, 2020 ( <b>15 days</b> ), as a way anticipation of school recess, without prejudice to the maintenance of the school calendar recommended by the Ministry of Education

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REGION/State	Decree/ Normative instruction	Issue date	Major provisions
Rondonia	Decree n° 28.871	March 16th, 2020	Decreases an emergency situation in the scope of Public Health and provides for (i) temporary measures to prevent the contagion in the state, and to cope with the spread resulting from the new coronavirus, COVID-19, and (ii) measures concerning the work regime of public and temporary contract servants in the Executive Branch, among other measures, including the suspension of educational activities in all institutions of the public and private education networks, for a period of <b>15 days</b> , which may be extended for equal periods
<b>MIDWEST</b> Goias	Technical note	March 15th, 2020	Determines to halt classes, preferably by anticipating school holidays, at all educational levels, public and private, interrupting activities for <b>15 days</b> , preferably starting on March 16th, 2020, with maximum tolerance up to March 18th, 2020, which may be postponed depending on the assessment of the State's health authority
Mato Grosso	Decree n° 407	March 16th, 2020	Provides for measures to deal with the public health emergency of international importance resulting from the coronavirus (2019-nCoV) to be adopted by the Executive Branch of the State of Mato Grosso including the suspension of classes in the state, municipal and higher education from March 23rd to April 5th ( <b>14 days</b> ), anticipating school vacation

First measures taken by states in Brazil to reduce the spread of Covid-19 in regards to education activity (3 of 3)

REGION/State	Decree/ Normative instruction	Issue date	Major provisions
Mato Grosso do Sul <b>SOUTHEAST</b>	Decree n° 15.393	March 17th, 2020	Adds article 2°-A to the Decree n° 15.391, of March 16th, 2020, which provides for temporary measures to be adopted, within the scope of the Public Administration of the State of Mato Grosso do Sul, to prevent the contagion of COVID-19 in the territory of Mato Grosso do Sul, suspending face-to-face classes in school units and in the centers of the State Education Network of Mato Grosso do Sul, during the period between March 23rd to April 6th, 2020 ( <b>15 days</b> )
Sao Paulo	Decree n° 64.862	March 13rd, 2020	Provides for the adoption of temporary and emergency measures to prevent the spread of COVID-19 (New Coronavirus) and recommendations for the private sector, including the suspension of classes within the scope of the Secretariat of Education and of the Paula Souza Center, gradually establishing, from March 16th to March 23rd, 2020, the adoption of this measure

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REGION/State	Decree/ Normative instruction	Issue date	Major provisions
Rio de Janeiro	Decree n° 46.970	March 13rd, 2020	Provides for temporary measures (i) to prevent the contagion and cope with the spread of the new coronavirus (Covid-19), and (ii) concerning the regime of public servants and contractors, as well as other measures, including the suspension of classes, for a period of <b>15 days</b> , without prejudice to the maintenance of the timetable recommended by the Ministry of Education, in public and private education units, including in higher education units
Minas Gerais Normative Instrument n° 18		March 23rd, 2020	Provides for measures adopted within the scope of the State Education System, as long as the state of PUBLIC CALAMITY lasts due to the Covid-19 pandemic, suspending the activities of basic school education for an <b>indefinite period</b> in all units of the state public school system
Espirito Santo	Decree n° 0378-S	March 16th, 2020	Decreases the measures for coping with the public health emergency resulting from the coronavirus (COVID-19), in the area of education in the State of Espirito Santo, suspending face-to-face classes for <b>15 days</b> starting on March 23rd, 2020

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REGION/State	Decree/ Normative instruction	Issue date	Major provisions
<b>SOUTH</b> Parana	Decree n° 4.230	March 16th, 2020	Decreases that face-to-face classes in public and private state schools, including entities affiliated with the State of Parana, and in public universities, will be suspended from March 20, 2020 for an <b>indefinite period</b>
Santa Catarina	Decree n° 509	March 17th, 2020	Continues the progressive adoption of measures to prevent and combat contagion by the coronavirus (COVID-19) in entities of the Direct and Indirect State Public Administration and establishes other measures, including the suspension of classes in the units of the public and private networks of education, municipal, state and federal (including early childhood education, elementary school, high school, youth and adult education (EJA), technical education and higher education) for <b>30 days</b> , from March 19th, 2020

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REGION/State	Decree/ Normative instruction	Issue date	Major provisions
Rio Grande do Sul	Decree n° 55118	March 16th, 2020	Establishes complementary measures to prevent contagion of the new Coronavirus within the State, decreeing the suspension of face-to-face classes within the State Education System as of March 19th, 2020, for a period of <b>15 days</b> , extendable Establishes the suspension, within the scope of the Federal
<b>FEDERAL DISTRICT</b>	Decree n° 40.520	March 14th, 2020	District, for a period of <b>15 days</b> starting on March 16th, 2020.: III—educational activities in all schools, universities and colleges, of the public and private education networks, which should be understood as school recess/vacations in the month of July

Sample of research conducted in Brazil describing Covid-19 effects on the Educational Sector

March-July2020

Research title	Main month of organizer(s) publication	Sample & Data collection	Contents	Some important findings
<p>Feelings and Instituto March perceptions of Peninsula 2020 Brazilian teachers in different stages of the Covid-19 pandemic. See bibliography for link: Instituto Peninsula (2020)</p>		<p>2400 educators across Brazil answered survey, of which</p>	<p>(i) Characterization of status-quo in face of school closures; (ii) teachers' perceptions of their role during the pandemic; (iii) activities to promote self-care and wellness; and (iv) teaching routines and habits</p>	<p>(i) Identified female teachers seemed to be more worried about their health than their male counterparts. (ii) 60% of private school educators stated that their main role was to engage with students remotely compared to 32.5 and 43.1% of educators in municipal and state public schools</p>

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Research title	Main month of organizer(s) publication	Sample & Data collection	Contents	Some important findings
<p>Education Rui Barbosa Institute's Cannot Wait Technical Educational Project Committee, Jede (Evidence and Interdisciplinary in Educational Debates), 22 state courts of account, and four municipal courts of account</p> <p>See bibliography for link: Faria et al. (2020)</p>	June 2020	<p><b>232 municipal and 17 state secretariats</b> of education answered two surveys and participated in in-depth interviews via phone</p>	<p>(i) Employed pedagogical practices during the pandemic;</p> <p>(ii) teacher performance; (iii) orientation to caregivers and parents; (iv) planning for returnal; and (v) distribution of goods/groceries to families</p>	<p>(i) Of all municipal secretariats, 27 and 25% affirmed that no strategy was currently in place to offer pedagogical support to students during the pandemic in the North/Northeast regions of Brazil. All municipal secretariats in the South/Southeast regions affirmed that offerings were available, however.</p> <p>(ii) Of all municipal secretariats, 93% of them affirmed that pedagogical interventions were aligned with BNCC.</p> <p>(iii) 84% of all municipal secretariats were preparing to resume classes</p>

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Research title	Main month of organizer(s) publication	Sample & Data collection	Contents	Some important findings
<p>Youth and the National Council of Youth Covid-19 (CONJUE), Em Pandemic Movimento, Roberto Marinho Foundation, Mapa Educagao, Rede Conhecimento Social, Visao Mundial, UNESCO. See bibliography for link: National Council of Youth (2020)</p>	<p>June 2020</p>	<p><b>33.688 youth</b> answered survey across Brazil, of which (i) 33, 66 and 1% self-identified as male, female and non-binary, and (ii) 46, 38, 14 and 1% self-identified as White, Brown, Black, and Indigenous, respectively</p>	<p>(i) Pandemic effects on youth's habits; (ii) the relationship between pandemic effects and youth's education, work, economic status, and health conditions, and (iii) youth's future perspectives</p>	<p>(i) 78% of White youth accessed the internet via computer, compared to 54% of Brown and Black youth. (ii) Disparities regarding feelings between female and male respondents, e.g. 50% of male-bodied individuals stated that they felt anxious compared to 67% of female counterparts, and 41% of male-bodied compared to 53% female-bodied responded that they felt frightened</p>

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Research title	Main month of organizer(s) publication	Sample & Data collection	Contents	Some important findings
Distance Education, Waves 1, 2 & 3	Imaginable Futures, Lemann Foundation, Itau Social, Datafolha June & July 2020	Wave 1: Non face-to-face education— 1.028 interviews with legal guardians, representing a sample of 1.518 students Wave 2: Non face-to-face education from the perspectives of students and families—1.028 interviews with legal guardians, representing a sample of 1.518 students	(i) Access and realization of schooling activities; (ii) challenges faced by students; (iii) and guardians' perceptions on schools' support systems, possibility of dropouts, etc. Same as above	(i) 82% of students who receive activities complete them. (ii) Time to complete activities is greater in ISCED levels 2 and 3. (iii) Those who received print activities spent less time on them. (iv) 47% did not receive orientations from schools. In Isced level 3, this figure grows to 69%. (iv) 46% consider that students are not motivated (i) increased leak of motivation, from 46 to 53%. (ii) 87% are afraid that students get infected with the new coronavirus once schools resume classes. (iii) 62% of guardians are in touch with teachers

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Research title	Main month of organizer(s) publication	Sample & Data collection	Contents	Some important findings
See bibliography for link: Data Folha et al. (2020a, b, c)		Wave 3: Non face-to-face education from the perspectives of students and families, representing a sample of 1,518 students	Same as above	(i) Increased lack of motivation, from 46 to 51%. (ii) Difficulties with studying routines increased from 58 to 67% between May and July. (iii) The percentage of parents who are concerned that children will dropouts increased from 31 to 38%



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**Claudia Costin** is a professor at Getúlio Vargas Foundation where she is director of the CEIPE-Center for Excellence and Innovation in Education Policies. She is also a member of the Governing Board of UIL at UNESCO. She was previously Senior Director for Global Education in the World Bank, Secretary of Education in Rio de Janeiro, and a Member of ILO's Global Commission on the Future of Work and Federal Minister of Public Administration in Brazil. She was a visiting scholar at the Harvard Graduate School of Education and at ENAP- École Nationale d'Administration Publique in Canada.

**Allan Michel Jales Coutinho** is a collaborator on matters pertaining to knowledge production at the Center for Excellence and Innovation in Education Policies (CEIPE-FGV). He is a graduate from the International Education Policy Program at Harvard University, a Lemann Fellow, a member of the Social Science Education Consortium Inc., and an alumnus of the United States Achiever Program (USAP) and of other leadership initiatives sponsored by the Bureau of Educational and Cultural Affairs of the U.S. State Department. He holds a B.A. *summa cum laude* in International Development in Education and Governance from Green Mountain College and Nagoya University.

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# Chapter 3

## The Fragility of the School-in-Pandemic in Chile



**Cristián Bellei, Mariana Contreras, Tania Ponce, Isabel Yañez, Rocío Díaz, and Constanza Vielma**

**Abstract** This chapter examines how Chilean education was affected by the COVID-19 pandemic in 2020. Like all school systems worldwide, Chilean education was strongly impacted, with schools closing for nearly the entire academic year, which necessitated an improvised “distance education.” This new system faced enormous difficulties, especially in rural sectors and for families that lacked sufficient resources in their homes, which in the case of Chile represent a significant portion of the population. Based on secondary sources and a study conducted by the authors, this chapter begins by describing the fundamental characteristics of Chilean education before continuing with an overview of the principal actions undertaken by public authorities to confront the pandemic in the educational sphere; we then present the (scant) information available on how the suspension of in-person classes affected different school actors and summarize the basic findings of our own study on this topic, whose focus is educational experiences at home. The chapter concludes with some reflections of a more general nature that seek to situate the educational debate triggered by the pandemic in a broader context, concerning the future evolution of the education system.

### 3.1 Education in Chile: Basic Context

The Chilean school system is known worldwide as an extreme case of the educational market, in which education is strongly decentralized, highly privatized<sup>1</sup>, markedly segregated, and in which a subsidiary state assumes a regulatory and evaluative role (Bellei 2015; Parcerisa & Falabella 2017; Valenzuela et al. 2014). In administrative terms, in Chile there are two school types: public, which depend on municipalities

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<sup>1</sup> Chile is among the countries with greatest private participation in school education (OECD 2014).

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C. Bellei (✉) · M. Contreras · T. Ponce · I. Yañez · R. Díaz · C. Vielma  
Center for Advanced Research in Education, University of Chile, Periodista Jose Carrasco Tapia  
75, Santiago, Chile  
e-mail: [cbellei@ciae.uchile.cl](mailto:cbellei@ciae.uchile.cl)



and Local Education Services<sup>2</sup>—intermediary bodies autonomous from the Ministry of Education—and private, which are entirely autonomous. Within the latter sector, there are private schools without state funding (which charge families high tuition fees) and subsidized private schools which, like public schools, are funded via a per-student subsidy (given that families have the freedom to choose a school, schools compete for family preferences to obtain more resources). In addition to receiving state resources, a minor part of subsidized private schools charge a copayment to parents<sup>3</sup>, and until 2015 they could profit from their earnings.

Within this arrangement, school enrollment is concentrated mainly in subsidized schools (92%), mostly private (56%), while public schools account for only 36% of students. One of the most salient consequences of the Chilean educational market model is the soaring socioeconomic segmentation and segregation between schools, along with the marked stigmatization and marginalization of public education (Bellei et al. 2018), which is attended primarily by students from the poorest homes. On the other extreme, unsubsidized private schools educate the highest-income students and have historically represented a smaller percentage of the enrollment—currently 8%.

In Chile there are 12 years of compulsory schooling (as of 2003), beginning with the first level of primary education, which lasts 8 years. Secondary education is divided into a common cycle (9th and 10th grades) and a differentiated cycle (11th and 12th grades), with tracks for scientific, humanistic, technical/vocational, and artistic education. Coverage is nearly universal in the case of primary education (99.7%) and very high in secondary education (87.7%) (MINEDUC 2018). In 2020, school enrollment climbed to 3,608,158 students. Although preschool education is not compulsory, coverage for kindergarten is very high (currently 94% according to Ministry of Education data from 2019).

Among the functions of the Ministry of Education are the formulation of the national curriculum, which is mandatory for all schools, and the determination of learning standards for each level. All schools, both public and private, have freedom of teaching; that is, they can offer their own curriculum if it covers the learning objectives established by the ministry. However, in practice schools do not differ significantly in terms of curricula and tend to follow ministerial plans and programs. In addition, the Ministry evaluates both schools and teachers through strong accountability mechanisms. For this, it relies on an institutional framework (Agency of Quality, and the Superintendence of Education) in charge of school supervision, evaluation, and orientation, and it intensively utilizes standardized tests of academic achievement (SIMCE) to apply sanctions and support. Initially created to inform parents in the process of school choice and foster competition between schools, SIMCE results are widely publicized in the school system and the press.

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<sup>2</sup> Entities in charge of the administration of public schools, in the framework of the law from 2017 that creates a new system of public education and stipulates the gradual transfer of establishments to municipal control.

<sup>3</sup> The educational reform of 2015, the “Inclusion Law,” has begun to gradually eliminate the copay.

As will be seen, the heightened decentralization and decoupling of the Chilean system, its marked socioeconomic stratification, and its strong focus on curricular coverage and external learning evaluation affected its capacity to adequately respond to the complex scenario generated by the pandemic.

### 3.2 Policies Adopted to Confront the Pandemic in Education

The first case of COVID-19 detected in Chile, in early March 2020, coincided with the beginning of the school year. After two weeks, the closing of all schools and preschool establishments, both public and private, was ordered, and the majority would not return to in-person activities at all during the year.

Following the suspension of classes, government education policy was redirected primarily toward facilitating conditions for schools, teachers, and students to be able to continue the school year through distance learning. This has meant multiple challenges that are not limited to deficits in technological equipment and connectivity, though to be sure this aspect has been a major limitation for a substantial proportion of students and schools, and part of the government's efforts have been directed toward filling such gaps. Although, as we will see later, the lack of access to devices and a stable internet connection is a problem that continues to affect a significant proportion of students, despite the different initiatives promoted by the government and other private and public organizations (such as universities). This line of policies and actions<sup>4</sup> can be grouped as follows:

- (a) Online pedagogical support for teachers, students, and families: Various types of support for distance learning have been created and made available to all school communities. These include the webpage “I Learn Online,” (Curriculum Nacional, 2020) which brings together pedagogical material, textbooks, videos, and exercises for all grades, and is adapted for use by students, teachers, and parents; through an alliance with the Mobile Telephone Association of Chile, downloads of school textbooks and guides are free of charge. In addition, software and applications to promote reading and ludic educational activities have been distributed; the Digital School Library has been enhanced, and reading clubs have been created as part of the literacy plan; free university preparation classes have been made available (so students finishing secondary school can prepare for the national higher education admissions test); a television channel has been created—*TV Educa*—in partnership with other public and private bodies, transmitting exclusively entertaining educational and cultural content from the first through fourth grade curriculum (MINEDUC 2020a); and lastly—although nearly at the end of the school year—an educational radio station was created for students in remote areas.

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<sup>4</sup> An official synthesis in “Balance MINEDUC 2020a”: <https://www.mineduc.cl/wp-content/uploads/sites/19/2021/01/BalanceMineduc2020.pdf>.

- (b) Support for schools and teachers: The availability of free software such as Gsuite and Office 365 A1 enabled for 5,700 schools; courses, training, and conferences on the use of educational platforms, the use of ICT tools, curricular prioritization, and socioemotional learning; and infrastructure plans for improvement, replacement, fitting out, and adaptation of school spaces for the return to classes. The topic of school coexistence and socioemotional assistance has also represented an area of reflection and guidance for schools. The Ministry generated guides for families and their socioemotional wellbeing and material for teachers to face the overload of work (MINEDUC 2020b, c, d). In April 2020, the authorities also relaxed the Preferential School Subsidy Law<sup>5</sup>, allowing schools to use subsidies for technological resources, sanitation, cleaning and disinfection of infrastructure, resources for infrastructure modification, and other activities to confront COVID-19 (Superintendencia de la Educación 2020). Furthermore, from May to November, the Agency of Educational Quality changed its strategy of support and evaluation to an online modality in which 846 schools from around the nation participated in “mentorships,” “remote visits,” (with an instrument simpler than the face-to-face), and “Agency Connects” (a virtual space where schools with noteworthy practices can share their good experiences), among which the mentorships were the best attended. The same agency, in August 2020, also created a “Citizen Consultation” to respond to the question, what is educational quality in the context of the pandemic? (With a view to rethink online support), in which more than 37,226 people participated (71% of them parents or guardians). The main results were that students’ socioemotional contexts were crucial to learning; that it was important to continue with online learning and strengthen it through more tools and resources; and that participation and interaction among students was essential.
- (c) Support focused on students: Mainly directed at low-resource students, subsidized schools, technical/vocational schools, and rural/isolated areas. Computers and tablets have been provided along with broadband mobile phones and physical educational materials; the school feeding program has been maintained (through the delivery of food boxes to families); and discounts for public transportation have been arranged. Meanwhile, for students with difficulty accessing the internet, the “I Learn at Home” plan was launched, delivering educational materials similar to the “I Learn Online” program in printed form, along with reinforcement booklets (UNESCO 2020).

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<sup>5</sup> The Preferential Subsidy created in 2008 provides additional resources to schools with students from low socioeconomic backgrounds; these resources can only be spent on items stipulated in an annual school improvement plan that each school designs.

Additionally, considering that the possibilities of addressing the compulsory national curriculum appeared to be seriously restricted by the reduction of class time, in May the government proposed a Curricular Prioritization that defined essential learning objectives for each grade and subject, which entailed making plans of study and mechanisms of evaluation more flexible for each school. The proposed curricular prioritization is based on the achievement of learning objectives at distinct levels, prioritizing the first level and incentivizing comprehensive approaches that integrate distinct objectives and even subjects. In terms of content, the proposal establishes that the plan of studies should be focused on the subjects of Language and Communication and Mathematics, although the subjects of Counseling and Technology are also important and represent a space that must be maintained. In terms of educational levels, certain critical courses are being focused on, including first and second grade (literacy); eighth and ninth grade (related to the transition to secondary education); and twelfth grade (focused on the completion of secondary school). Lastly, it has been emphasized that each school should decide what is fundamental in their study plans and how this can be adapted to the curricular prioritization (MINEDUC 2020f). The curricular prioritization is optional, as each school can adjust it according to their context and conditions, and it will be valid for all of 2020 and 2021, with the expectation of resuming the official national curriculum in March 2022.

Despite all of these supports and flexibilization measures, the government's strategy to face the pandemic at the school level was problematic, which points to poor political management and limited capacity for dialogue and empathy with the school communities and families living through a crisis scenario.

The first issue was the failure to concretize a return to face-to-face activities during 2020. The first estimated return date was set at the end of April, after declaring an early "winter break," when the pandemic was still in its initial stages and the scenario was highly uncertain. The decision was widely criticized by various sectors, including health and education experts, and especially the teachers' union. Later, with the second half of the school year well advanced, the Ministry convened a work group, together with UNESCO, that created a proposal that included evidence on the negative effects of a prolonged interruption of classes, knowledge of international experiences of reopening, and a participatory dialogue on reopening classes and the nature of monitoring and accompaniment in schools that reopen (MINEDUC 2020e). Thus, it was only as recently as October, after the creation of this committee of experts, that a protocol was designed for the "secure return" and some schools began to partially restart in-person activities. However, the scant credibility of or confidence in the authorities, the limited previous investment to refurbish schools (during most of the year the government rejected providing additional resources for this purpose), and the pressing fears of families who had primarily opposed the return impinged upon the reopening process, which ultimately was only carried out by a small fraction of schools, and mainly in high-income sectors. Furthermore, the disagreements between the Ministry and the teachers' union, along with actors from civil society and local authorities, did not cease and characterized the start of the 2021 school year.

The second issue was the government's insistence on maintaining standardized assessments of school actors in the middle of a social and health crisis. This was clearly expressed by the government's determination on maintaining the SIMCE test (System for Measuring the Quality of Education), although it was later transformed into an optional measure to be used for informational purposes based on a sample of schools, the Ministry initially upheld its normal application, a situation that was widely questioned by the teachers' union, experts in the area, and various educational institutions<sup>6</sup>. Another case was the National Teacher Evaluation, which was also maintained, although as a voluntary activity<sup>7</sup>. The main criticisms against these measures point to the validity of the results in a context of exceptional crisis, and thus to their limited utility for decision-making; to the stress that such measures entail for educational communities, given that the SIMCE, along with the National Teacher Evaluation, are tools utilized for classification of schools and teachers and the allocation of economic resources and incentives; and to the unjustified use of these resources that could be redirected to other priority areas in education. A final example was the maintenance of the practice of grade repetition based on student performance, which, being a questionable pedagogical measure with known negative effects even in normal times, was hardly justifiable amidst a crisis in which most students have barely been able to maintain their engagement with the educational process from home.

Finally, there is little information available on how local public education administrators have confronted the pandemic, although some innovative practices have been documented. For example, in terms of semi-rural areas, the Lampa Municipality published a manual specifically aimed at supporting families in terms of recreation, promoting physical activity to improve the time at home (Corporación Municipal Lampa 2020); and the María Pinto Municipality managed to continue the functioning of their youth orchestras online, prioritizing extracurricular and artistic contents (Corporación Municipal de María Pinto 2020). In urban areas, the Renca Municipality encouraged the development of a project-based learning methodology for its schools and published a catalogue of good practices among its schools (Equipos Educativos de la Corporación Municipal de Renca 2020); and in the Las Condes Municipality, a website called "Learn While Traveling" was created, which was focused on pre-school education and displayed different "worlds" (aspects of knowledge) with material prepared by local educators, including about the human body, animals, the universe, and culture, among others. These examples demonstrate innovation and concern for enriching students' experiences during the pandemic that exceed curricular prioritization.

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<sup>6</sup> <https://www.ciperchile.cl/2020/05/16/simce-despues-del-confinamiento-servira-para-algo/>.

<sup>7</sup> <https://www.ciperchile.cl/2020/07/02/evaluacion-docente-en-contextos-de-covid-la-trampa-del-progreso-profesional/>.

### 3.3 Effects of the Pandemic on the Educational Process and the Responses of Actors<sup>8</sup>

The relocation of school to the home has forced the reinvention of various educational actors amidst an unprecedented situation in which the most basic aspects of teaching processes have become a challenge: creating educational strategies that overcome inequalities, allowing all students to have an educational experience with even minimum safeguarding of learning, and socioemotional conditions and well-being at home. In this section we present the main challenges and opportunities that were faced during 2020 by schools, teachers, principals, families, and students in this distance-learning scenario through a review of Chilean empirical literature that tackled these subjects.

The school is a space of socialization that allows community and support networks to be formed between distinct educational actors, so its functioning based on communication is key to coordinating a system that structurally organizes a significant portion of families' and students' lives. During the pandemic, the closing of the school and its relocation to the home has transformed daily lives and private and shared spaces, leading to the question of how to improve and deepen the emerging relationships among actors. Likewise, the educational experiences of children confined to their homes have uncovered deep inequality and social, material, and territorial exclusion, revealing the fragility of the diverse actors who sustain the "educational chain." Specifically, we refer to the following: a school with an essential social role that must maintain minimum teaching conditions; the teachers working to stay in contact with students and providing learning tools and socioeconomic resources, which are especially important during a crisis of this proportion; the families and students who must balance their private spheres with experiences of working and studying at home; and finally, the role of the state in implementing public policy in a realistic manner that can effectively answer the needs of a profoundly altered education system.

A study on educators at the national level demonstrated that teachers have developed a new ethos in their work during this period, since the focus of their pedagogical labor has not been placed solely on learning achievements-as it was prior to the pandemic-but also on concern for the social and emotional situation of families (CIAE, Eduinclusiva, Eduglobal 2020). Some have had to support families in terms of food and household wellbeing, becoming involved in the precarious situations of students in rural areas who do not have access to connectivity or material learning resources. In low-income urban sectors, the reality is not much different, as explained by the director of a school in a working-class area of Santiago: "they live in houses that are 425, 475 square feet (40–45 mt<sup>2</sup>), with five or six people, without the real possibility of having a place to study. These are families with the parents out of work, who today are more worried about figuring out meals, where the focus is put

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<sup>8</sup> This section is configured with the analysis of different studies. To review the methodology of each one, see table in Appendix 1.

on surviving, and their kids' education takes second place" (Equipos Educativos de la Corporación Municipal de Renca 2020, p.17).

School and home are mutually necessary because the proper functioning of one is a condition for the stability and progress of the other. However, many teachers perceive a relative absence of parents. One study on teacher wellbeing, also national in scope, revealed that only 25% affirm that their students have an adult available to help them with school during the health crisis (Fundación Chile 2020). Likewise, teachers perceive a lack of interest among families and students when receiving new content, while 40% of teachers feel less supported than before the pandemic by parents and guardians (Elige Educar 2020). The comparative mental health research by (Lagarribel, Halpern, Montt & Rojas-Andrade 2021) also showed more than 50% of teachers present high stress symptoms and significant mood disturbances. What has caused the most stress were the psychological demands of a year of the pandemic: many had to urgently learn digital skills that they did not have. They had to quickly transform their way of doing face-to-face classes to online platforms, which was worsened by a context in which, before the pandemic, 78% of teachers were only at an initial level of digital skills. (Claro, Salinas, Cabello-Hutt, San Martín, Preiss, Valenzuela & Jara 2018).

Connectivity problems while maintaining an online distance school have reinforced existing inequity<sup>9</sup>. The participation of students in daily school activities has varied considerably based on school type: public school teachers estimate that only 14% of their students participate in virtual classes versus 81% in unsubsidized private schools (CIAE, Eduinclusiva, Eduglobal 2020); in addition, 71% of teachers claim that their students have had connection problems when receiving pedagogical information and resources (Elige Educar 2020); lastly, only one out of four Chilean teachers believes that their students possess the resources and tools necessary to participate in distance education (Fundación Chile 2020). According to a longitudinal study with a sample of 16,000 homes throughout the country, 1.2% of students did not receive any online class or educational materials during the pandemic<sup>10</sup>, while students with weaker internet connections could only receive brief daily educational capsules via social networks like WhatsApp or by email, and a very small proportion could connect with their teacher directly for a class. In fact, 38% of public-school teachers confirmed that they communicate with their students through telephone calls when the connection is deficient, a means that is virtually unused in private schools (CIAE, Eduinclusiva, Eduglobal 2020). By contrast, 85% of students from unsubsidized private schools have received online classes with the possibility of interacting with the teacher and their classmates (which points to frequent use of platforms like

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<sup>9</sup> At the national level, reports indicate that 12.6% of Chilean homes did not have an internet connection in 2017. In homes with school-age children or youth (defined as 5 to 24 years old), this statistic drops to 6%, though it is 10% in the lowest-income quintile of the population and 3% in the highest-income quintile (Subsecretaría de Telecomunicaciones 2017).

<sup>10</sup> <https://www.latercera.com/que-pasa/noticia/clases-a-distancia-mientras-el-61-de-alumnos-de-mas-altos-recursos-accedio-a-traves-de-computador-propio-solo-el-29-de-los-de-mas-bajos-recursos-pudo/2XE5R4UZJVC5JBB6RW3Q16RWIU/>.



Google Classroom, Zoom, or Aula Virtual), compared to 33% of their peers in public schools (Elige Educar 2020).

One of the great gaps in this period of learning at home has been the lack of interaction among students. According to a citizen survey carried out by the Agency of Educational Quality, 55% of parents and guardians state that their children have not interacted with classmates during 2020 (Agencia de Calidad de la Educación 2020), although there are significant differences based on school type, with public school students being the most isolated. In the case of rural areas, the students' experience has been even more solitary. A teacher from Chépica (a rural zone in central Chile) explained that she has "prepared individual guides and been working with the rural modules that the Ministry of Education sends us. All that material has been sent on printed paper to the students"<sup>11</sup> (Enseña Chile 2020). In some cases, this includes distribution to students' homes by the teachers themselves, while in others, families must go to the school. Meanwhile, in terms of the lack of connectivity and interactive classes, 70% of teachers claim that a main teaching–learning activity is the weekly delivery of work materials ("guides") to their students (CIAE, Eduinclusiva, Eduglobal 2020).

In general, to communicate with students, teachers have stated that they use email (63%), WhatsApp (55%), Google Classroom or Zoom (34%), school textbooks (33%), telephone calls (30%), YouTube (26%), printed work guides (23%), other textbooks (15%), Facebook or Instagram (14%), and SMS (7%) (Elige Educar 2020), which illustrates the diverse efforts that have been made. Beyond pedagogical encounters with students, 42% of teachers have contacted their students to find out how they are doing during the pandemic through social networks, which have enabled a new form of interaction (CIAE, Eduinclusiva, Eduglobal 2020).

These new forms of communication have opened the possibility of new methodologies, generating activities that can maintain students' attention. For example, some teachers report that they have motivated uninterested students through activities on WhatsApp including audio stories, guessing games, rhymes, and tongue twisters, or with relaxation and mindfulness exercises or others that help identify emotions through games and storytelling (CIAE, Eduinclusiva, Eduglobal 2020).

School principals have also been focused on learning development (66.7%) and student wellbeing (54.5%) during the pandemic, and they believe that the health crisis will make families value the work that teachers do with their children far more (Montecinos et al. 2020). Principals believe that appreciating the importance of students' socioemotional wellbeing will help prepare them for other potential crises, and they consider this period to have fostered students' learning autonomy, in addition to a reevaluation of in-person classes for the personal and social interaction they provide with classmates and teachers (Montecinos et al. 2020). In terms of students' educational situation, most principals anticipate a significant deterioration in learning achievements and an increase in structural inequality, and in terms of

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<sup>11</sup> Account obtained from <https://www.ensenachile.cl/blog/enfrentar-la-educacion-a-distancia-desde-el-contexto-rural/>.



policy, they suggest focusing on flexibility and decreasing results-related pressure on schools (Montecinos et al. 2020).

Finally, during this period the role of the family has been paramount, taking on special prominence in children's learning processes and balancing time and work in the mission to keep the home on track emotionally, socially, and in terms of education. But families themselves are fragile in the face of the pandemic. A study that interviewed parents and guardians of children six years old or younger revealed a stark image of home reality: 69% of parents state that their family incomes have decreased since the pandemic began, 47% worry about a lack of food and/or clothing for their family, 15% have been affected by the death of a loved one, 21% have had a relative who was hospitalized, and 25% take medication to regulate sleep or mood (CEDEP 2020). Meanwhile, in terms of educational priorities for their children during this period, according to a study from the Agency of Educational Quality (2020), the most essential for parents and guardians is reinforcing academic learning, followed by an emerging necessity for emotional development. Topics such as learning to live in a community and coexisting with others have returned to center stage for families during this time because the socioemotional effects for the entire family unit have been deep and unprecedented. It is important to note that the weakness of the Chilean school in the psychological and social dimension predates the pandemic, as the work of diverse educational actors has been overly focused on academic dimensions and a traditional conception of the discipline (Salas et al. 2020), rather than on a comprehensive view of the school as a space for socialization and development of skills for the 21st century (Bellei & Morawietz 2016).

In the case of early childhood, parents report that their children are more worried and irritable, that it is harder for them to get up in the morning, and that they are more fearful than before. While nearly two-thirds of children are demanding more support and company, more than half feel irritable and angry or cry and have temper tantrums, and 40% have lost the motivation to learn and explore (CEDEP 2020). According to the same study, parents are worried about excessive screen time, the lack of nature and fresh air, low social interaction with peers, high emotional reactivity, decreased movement, and health risks related to missing check-ups and vaccines. According to a study that evaluated the mental health of students before and after the pandemic, 21% of parents indicated that their children evolved from not presenting any symptoms related to their mental health before the pandemic to having at least one during quarantine. The most significant increases were "lack of desire, even to do activities that they like," by 30%; "Changes in appetite" and "trouble sleeping," both by 26% percent;" and "being sad" at 25% (Lagarribel, Halpern, Montt & Rojas-Andrade 2021). But it has not all been negative, as parents have also valued this period because they have been able to play, converse, and spend quality time with their children, in addition to becoming involved in their learning process (CEDEP 2020).

### 3.4 The Fragility of the Experience of Schooling at Home

After a full year of “live-in” school, what do we know about how children’s educational experiences have been at home? In this section, we present findings from the study “Children’s educational experiences at home during the COVID-19 pandemic<sup>12</sup>,” carried out by the authors and centered on the receiving end of the educational act: the student. Considering the unprecedented scenario, this study operated with a broad definition of “educational experience,” in which in addition to exploring distinct instances of learning (formal, informal structured, and every day), an approach to constraints on educability was also included—that is, a recognition of the material, social, and personal surroundings that contribute to or detract from learning.

Data was obtained through a self-administered online survey directed at parents and guardians of school-age children (4–17-year-olds) and in-depth interviews carried out with children between 8 and 13 years of age in different regions of the country. The data collection was carried out between September 1 and October 14, 2020. The online questionnaire was partially based on the survey developed by the Autonomous University of Barcelona “Confinement and Learning Conditions” (Bonal & González 2020), adapted to Chilean reality.

A non-probabilistic sampling by quotas with basic coverage in all regions was used together with post-stratification weights based on enrolment numbers by Municipality and School property (public, private, or subsidized). A sample of 4,912 households with children of school age were reached, with cases in all 16 regions of the country, and in 241 municipalities, out of a total of 345 with school enrolment. The sample collected represents geographical areas where 87% of the national enrolment is located.

Regarding qualitative sampling, it was composed by a grand total of 47 children, 19 of them living in Metropolitan Region, 14 of them in Ñuble Region and 14 in Los Ríos Region, both in urban and rural areas. Out of this total, 22 were girls and 25 boys. 13 of them attended private schools (10 of which located in the Metropolitan Region), 19 of them attended subsidized private school (12 of them free of cost), 14 attended municipal schools, and 1 girl attended home schooling. Regarding payment methods, 26 children attended free schools, while 21 attended paid schools (even though not all students who attended subsidized private schools with co-pay effectively paid for tuition).

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<sup>12</sup> The study was funded by the National Research Agency through the “Concurso para la Asignación Rápida de Recursos para Proyectos de Investigación sobre el Coronavirus (Covid-19) Año 2020” along with base funds from the Centro de Investigación Avanzada en Educación at the Universidad de Chile.

***A “change of venue:” With the school in pandemic, inequality migrated to the internet***

The impact of adapting the school to a virtual modality varied in intensity according to pre-existing conditions. The school in pandemic is incapable of attenuating inequalities of origin, given the difficulty of standardization from a distance. This occurs despite the virtual school presenting a fairly common base modality, among whose attributes are the scheduling of online classes on virtual platforms and the implementation of learning resources, with guides and videos prepared by teachers being the most usual.

This modality, however, presents significant differences based on school type according to our study, while 8 of 10 students from unsubsidized private schools receive online classes every day, in public schools and free subsidized private schools, the amount varies enormously: on one extreme, only 3 of 10 students claim to have class every day; on the other, 2 of every 10 students state that they “never have classes online.” These differences are in turn augmented by unequal criteria that operate when online classes are carried out. We observed through our qualitative data that unsubsidized private schools have divided their courses to ensure more personalized learning, while subsidized private schools have opted for joining courses, which can reach more than 50 students online in unison. Likewise, public schools and free subsidized private schools have depended on more traditional support, such as guides and physical materials sent home and communication via telephone or email, all less efficient means.

In terms of content, it is evident that the school in pandemic is greatly hindered in terms of fostering comprehensive learning. Through interviews with students, we noticed that curricular prioritization has been one measure adopted by a significant proportion of schools, configuring a standard foundation of mathematics and language, and another that is a bit more sophisticated, which includes social and natural sciences. According to the children interviewed, the arts and physical education have generally been the most neglected subjects, being retained primarily for students from unsubsidized private schools.

It is also important to highlight the transformation of evaluative parameters in the face of a limited school environment. Though schools have incorporated criteria of curricular hierarchization, a “survival strategy” is applied on the part of the students. Thus, students with less motivation toward school only complete the guides that will be evaluated or are up to date solely in the subjects that “count to pass the grade.” This measure has resulted in the formation of an insurmountable gap in the framework of the school in pandemic. As we observed in the survey, 25% of students devoted less than 1 hour per day to school activities and 33% dedicated 4 hours or more, which leads to a monthly difference of at least 60 hours between the two, differences that are strongly associated with their family socioeconomic status. It is important to note differences in dedication to schooling between the different educational levels. While almost half of those students in primary school (48%) and a third of those among secondary school students (34%) dedicated two hours or less to curricular activities, most students attending pre-primary school only dedicated one hour or less. On the

other end of the spectrum, those who dedicated the most time to curricular activities were secondary students, with 38% of them dedicating 5 hours or more of time to curricular activities.

Thus, it is necessary to be emphatic: the school in pandemic has exacerbated the structural inequalities of the Chilean education system. In this modality, the shortage of resources is intensified, as the existing differences have been translated to a single virtual space which, in disadvantaged sectors, multiplies the flaws of the school with the shortcomings of the home.

### ***What is left “unseen” by distance learning***

This year, a large majority of virtual classes were carried out with “camera off” students. Whether due to the weakness of their connection, the deficiency of their equipment, or individual discomforts, children were in class only as listeners, without necessarily giving any sign of attention or presence. This metaphor leads to a discussion of the “blind spots” of the school in pandemic, which play a significant role in the evaluation of the past year.

To this effect, we can observe how unequal material opportunities for study interact. Thus, in homes of more than 1,075 square feet (100 mt<sup>2</sup>), more than 80% of children always have a space of their own to study and do homework, far exceeding the possibilities of those who live in houses of 320 square feet (30 mt<sup>2</sup>), of whom only 36% have a space to study that is always available and 34% have no such space. Convergently, this gap is repeated for other constraints of educability, including possessing didactic resources, a good internet signal, or a desk.

In the same vein, a spatial overlap of the school and the home occurs. Thus, those who live in more spacious homes or who have exterior spaces in which to “disconnect” from the school environment are in a better emotional state in terms of educability, compared to those who cannot physically separate from their at-home school workspace.

Another resource for educability, highlighted by results of the questionnaire, was access to a computer used exclusively for schoolwork and internet connections. While 2 of 3 students from unsubsidized private schools have their own computer, only 1 of 3 of their peers from free subsidized private schools possess this resource, while 1 in 8 do not even have a computer. Meanwhile, in the homes of students from subsidized private schools, only 1 of 5 can rely upon mobile internet connections and this figure is doubled in the case of students from free subsidized private schools. When evaluating connection quality, while nearly a third (29%) of students who attend free subsidized private schools or public schools have connections that they consider deficient, this indicator is halved (14%) among those who attend unsubsidized private schools.

While material provisions are fundamental to face the situation of the school in pandemic, it would be impossible to do so without a family to carry the demands of the “live-in” school. In this context, another critical gap that appeared on the survey and during the interviews was the clear dependency on the mother for the achievement of the educational process, with the mediation of the school in the home environment resting on her shoulders. This situation leads to repercussions in family coexistence, in which half of people claim to completely agree or agree

with the statement that girls and women have been more exposed to some form of violence (physical, psychological, or sexual) in the home, while 71% affirm that mainly women have been in charge of domestic work and care. Thus, for 92% of preschool students and 81% of primary school students, it is the mother who oversees “activating” the school at home, helping with schoolwork, and providing some measure of supervision to ensure their children’s continuity in this situation. In this way, the COVID-19 pandemic has revealed the multiple factors that affect learning. To secure optimal educational processes (both formal and informal), it is not enough to guarantee a larger material equity. On top of this, pressure inside the household, domestic violence, and an overload of work for mothers are also factors which affect the education of children.

***The reinvention of the child’s world: Between emotional inequality and alternative ways of learning***

The school in pandemic has been fundamentally challenging for children. Added to the situation already described, many girls and boys have had to grapple with loneliness during lockdown. In interviews, a substantial proportion affirmed that friends, recreation, and the ordinary life they share are some of the experiences they miss the most, being above all moments in which they do not have to fill the role of student or son or daughter. Undoubtedly, social distancing, lockdowns, the suspension of classes, and the general economic crisis have impacted the wellbeing and emotional world of these generations. The results of our survey show that socioemotional problems affect a significant proportion of students, with the most prevalent being getting bored easily (52%), difficulty concentrating (46%), not wanting to do schoolwork (43%), and getting frustrated often (40%). Additionally, between one-quarter and one-third of children have been more conflictive and more irritable, as well as experienced alterations in sleep and appetite. It is worth mentioning that socio-emotional measurements showed variations according to educational level, being secondary age students (between 14 and 18 years old) those most affected by lockdown. Meanwhile, primary school students had trouble complying with homework and curricular activities. Preschool students (4 to 5 years old) struggled mostly with everyday stress related situations. These effects vary by case: in the context of better social and economic conditions, there tends to be greater capacity to regulate the demands (physical, psychological, and material) of this situation. To confront the stress and loneliness of this period, many children have taken refuge in technological devices amidst the entropy of daily life. According to the survey, 86% of children are in front of a screen every day (television, tablet, or cellphone). Other daily activities outside of school include helping with household work (40%), chatting with friends, communicating via social networks (33%), and reading and playing video games (32%).

It becomes clear, then, why the management of free time has been one of the most complex spheres to resolve during the lockdown. Going from 8 hours per day at school to educational activities that often do not exceed a few 45 minutes blocks per week is certainly complicated. In some cases, this situation has led children to

take a more proactive stance toward their emotional state, generally associated with an exploration of their interior worlds.

Interestingly, 56% of families surveyed state that their child has developed new interests and talents during this period of learning at home, in addition to autonomy and self-confidence (61%). Indeed, 20% even consider their children to be learning more at home than at school. If this last assertion is evaluated by educational levels, 67% of families with children in pre-school age agree with developing new interests and talents during lockdown, while 54% of families of students in primary school and 51% of secondary school students agree with this proposal. The massive use of “do it yourself” tutorials, which not only reinforce a positive self-perception, but also stimulate learning by doing as an approach of trial and error. Thus, when seeing others of a similar age painting their rooms, transforming their clothing, cooking, or organizing their things, children feel inspired, delve into their interests, and work toward a finished product.

It should be noted that in this area, we identified certain gender differences. In terms of the use of free time, we observed different manners of addressing the lack of compulsory activities. Among girls, 77% engage in activities like drawing, painting, or crafts every day or some days, compared to 58% of boys. Boys, meanwhile, play videogames daily (72%), compared to 45% of girls. Likewise, a gap of 7 percentage points was noted in terms of household contribution, with girls helping at home more than boys, along with participating more on social media.

In this sense, while the experience of learning from home has been critical in all cases and has confronted children with difficulties previously unknown to them, the reinvention of the child’s world through play and the possibilities of informal learning at home has become a way to accommodate the complexity of the process. In the face of the destabilization of the school that provided continuity to their daily experience, the evaporation of peers who were models of identity, and the absence of compulsory time within the school institution, children have been able to practice autonomy, creativity, and self-discipline, though in contexts of great material, emotional, and family difficulties.

### **3.5 Final Reflections: Looking to the Post-pandemic School**

Since at least the beginnings of the 20th century, the social sciences have repeatedly returned to the discussion of the validity of the institution of the school, including voices that suggest not only its decline but also the convenience of its replacement. More recently, some have joined the debate who believe that information and communication technologies have become sufficiently sophisticated to dispense with teachers to a large extent, joining a long tradition of faith in educational technology that merges self-study guides, computers, and the internet. If we have re-learned something from the COVID-19 pandemic, it is rather the opposite: the centrality of the school in our society and the critical role teachers play as mediators of learning.

Of course, this does not imply that traditional schooling and teaching do not require changes, a matter which we reflect on in this final section.

As the evidence discussed in this chapter has shown, as the school has become secluded in the house, each has mimicked the other, and the educational process that each child has experienced has depended decisively on conditions at home. In its most basic sense, institutional education is a collective commitment to provide each generation with a formative experience that is independent of the privileges or disadvantages of the family; it is a common formative experience that children have the right to as citizens, beyond their families. What the pandemic has done is to remind us of the urgency of this commitment. In a society such as Chile, plagued by inequalities and with significant proportions of children living in very basic conditions, the closer to home the school comes, the less just it will be. Closing schools has a very high, yet differential cost. This has a direct implication for the process of reopening and returning to in-person class. Heterogeneity in terms of what learning has been achieved in different circumstances will be the norm. Schools will need to organize flexible pedagogical processes that are sensitive to this heterogeneity, recovering for example the didactic strategies typical of multigrade classrooms, such as peer tutoring.

As challenging as the work of “leveling learning” is, it is nevertheless a well-known matter for Chilean schools, since—although at another scale—they dedicate themselves to it continuously. The truly complex task, by contrast, will be understanding the centrality of the socioemotional experience of students, identifying traces of what they have lived through, and producing a favorable attitude toward schoolwork beginning with their overall wellbeing. This refers to a longer-term undertaking, a more structural change that is required in education and that the pandemic itself has helped us recognize as urgent. In Chile, curricular priorities are strongly biased toward academic learning and pedagogy, very focused on instruction in fundamental cognitive abilities such as language and mathematics. Both the intrapersonal and social dimensions of learning have traditionally been neglected (Bellei & Morawietz 2016). Yet they are the two dimensions that have shown to be most significant during the confinement and decoupling of daily life to which children have been subjected during this period. Higher order cognitive skills have also been less emphasized, a competence that is needed to make sense of the complex pandemic situation and undertake multidisciplinary learning.

The almost complete destabilization of children’s daily world has meant an enormous emotional load, with consequences for mental health and quality of life in general that we are only just beginning to grasp, as we have shown throughout this chapter. Schools and teachers have tried to provide support in this area, and—after the initial shock—emphasis has increasingly been moving in this direction. Aspects such as character building, finding meaning in things, finding purpose, and aligning it with the will, self-maintenance or monitoring one’s own feelings, and more generally, staying healthy and dealing with insecurity and fears, are some examples of “21st century skills” that the Chilean school has disregarded and that the school in pandemic has had to dust off during a time of crisis. Furthermore, disciplines such as the arts and sports (vital for staying healthy during this period), which constitute

excellent means of accessing these competencies, are frequently marginalized in the Chilean school to privilege efforts toward standardized tests, which the authorities use to create rankings and distribute awards and sanctions to schools and teachers (Bellei et al. 2014, 2020). The post-pandemic school must recalibrate these priorities.

Social skills represent another domain that is even more undervalued by Chilean education. There is little teaching of teamwork, collaborating in diverse contexts, valuing differences, or arguing and being persuaded. The school in pandemic has been even more solitary; in addition to the suspension of face-to-face classes, there is the fact that teachers have made very little use of resources of dialogue and group assignments with classmates. To give another example, during 2021, Chile will carry out a process of creating a new political constitution because of the enormous social mobilization of 2019; schools, especially secondary schools, will have an invaluable opportunity to privilege citizen education and use the constitutional debates as catalysts for dialogue, inquiry, and participation with social and life processes of both local and national contexts. Evidence shows that Chilean students are highly interested and motivated regarding public problems (indeed, they have also led massive student movements for over a decade), but the school fails to take advantage of this motivation, teaching them little or nothing about citizenship (Schulz et al. 2016).

Lastly, the school in pandemic has not only called curriculum and pedagogy into question, but also the rules of its organization, the grammar of schooling (Tyack & Tobin 1994), which includes detailed planning, rigid schedules, the courses, the separation of subjects, and the rules of evaluation and repetition, just to name a few. More fundamentally, the dissolution of the distinction between the space/time of the home and the school and the roles of mother/teacher are the extreme manifestation of this abrupt and forceful deinstitutionalization. Indeed, many teachers and families attempted to respond to the new scenario with known tools, those of habitual modes of operation, including the extreme example of some schools which required that their students wear a uniform at home to connect to Zoom classes, and others that demanded that two cameras be turned on during evaluations to monitor the behavior and surroundings of the student and avoid cheating. The educational authorities, meanwhile, did the same, insisting on applying official standardized tests of academic achievement. Upon returning to in-person classes, the temptation to go back to “business as usual” will be great, and it will be necessary to resist it. Perhaps it would be sometimes convenient to place students in smaller groups, and maybe the criterion should not always be age, but rather their interests and motivations; perhaps schedules should be flexible and variable to accommodate the state of mind of the group in a given moment. And what would be the point of having students repeat a grade in a context of a massive curricular delay, which in any case is probably not the most important issue? The grammar of schooling must be revised using a simple criterion: the rules that do not help rebuild individual and group health, that do not help facilitate a process of healing and re-engagement with education, should be put on hold. Increasing the instrumental productivity of the system will not be the priority, and the selective and competitive logic that feeds into such objectives will have been called into question not a moment too soon.



Before concluding, we offer a final comment looking beyond the field of education. As we have argued, the centrality of the school to the functioning of society, family dynamics, and children's socialization has been reconfirmed by the dramatic "natural experiment" that the pandemic has represented. Further, complementary functions of the school, such as channeling social policy (e.g., nutrition), physical health (e.g., contagion prevention), and psychology (e.g., supporting students affected by the stress and anguish of lockdown) can even be seen to have been reinforced during this period. The centrality of classmates as a reference group and students' daily social coexistence has also been highlighted. The school is the main institution created to embrace and promote the development of the society's children and youth. However, in Chile we have confirmed, at the same time, the fragility of the school, and more generally of the education system as a whole. The absence of intermediate levels of management that support the work of the schools at a local level, the virtual non-existence of forms of horizontal cooperation and networking, and the lack of support from local governments and other institutions to complement the work of schools has also been highlighted, as well as the lack of political priority of children's wellbeing at the top of the agenda. We ask much of the school, and we support it little. In the future, it will be necessary to rethink the monopolizing model of the school for childhood, advancing toward the notion of "educating cities." For example, this could include creating new institutions in different communities that offer alternatives in terms of education, exploration of interests, and sociability, and integrating the school with the rest of the local and community organizations that exist. The school cannot satisfy all the requirements of childhood, nor is it desirable that it would try.

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## Appendix 1

	Type of study	Target population	Statistic sample	Application period	Sample according to gender	Sample according to type of establishment	Responsible organization
COVID-19 new contexts, new demands and teaching experience in Chile	Self-administered online survey	Teachers of all school levels of the education system	N = 2.205	May 25 to June 29, 2020	Female gender: 76,3%, Male gender: 23,7%	Private with state subsidy: 42,3%, Public: 35,2%, Private without subsidy: 18,4%	CIAE, Eduinclusiva, Eduglobal
Engagement and exhaust in Chilean teachers: a look from the reality of covid-19	Survey administered online survey	Teachers working in primary and secondary education institutions	N = 2.657	April 22 to July 5, 2020	Female gender: 75,35%, Male gender: 24,24%, Other: 0,41%	Public: 46,67%, Private with state subsidy: 40,12%, Private: 13,21%	Educarchile, Circular HR
Situation of teachers and educators in the context of pandemic	Survey administered online survey	Educators, teachers, and managers of all levels of the educational system.	N = 7.187	April 21 to May 5, 2020	Female gender: 78,9%, Male gender: 20,3%, No answer: 0,8%	Private with state subsidy: 42%, Public: 40%, Private without subsidy: 16%	Eligeeducar

(continued)

(continued)	Type of study	Target population	Statistic sample	Application period	Sample according to gender	Sample according to type of establishment	Responsible organization
Public consultation. Quality of education in the context of a pandemic	Digital survey with closed questions (of alternatives) and open questions	Mothers, fathers, and guardians. Workers in educational establishments; students and citizens	N = 37. 226. 26.447 mothers, fathers, or guardians. 7.870 workers of educational establishments. 2.106 students. 803 citizens	August 24 to September 30, 2020	Female gender: 85,17%, Male gender: 14,61%, Other: 0,23%	Public: 61%, Private with state subsidy: 35%, Private: 4%	Agency for the Quality of Education, Government of Chile
National consultation on the situation of early childhood due to the covid-19 crisis	Online perception survey	Mothers, fathers, and guardians of children from 0 to 6 years old	N = 10.013	July 9 to July 31, 2020	Female gender: 93%, Male gender: 5%	Public: 48,2%, Private: 28,7%, Private with state subsidy: 9,2%	Center for Development Studies and Psychosocial Stimulation (CEDEP)
Impact on the mental health of Chilean preschoolers and schoolchildren associated with quarantine by covid-19	Online questionnaire of socio-emotional conditions	Mothers, fathers, and guardians of children in pre-kindergarten through fourth grade, whose ages ranged from four to 11 years	N = 4.772	August 18 to October 26, 2020	<b>No Data</b>	46 public education establishments in the communes of Cerro Navia, Lo Prado and Pudahuel in Santiago	North Department of Psychiatry and Mental Health of the Faculty of Medicine of the University of Chile

(continued)

(continued)

	Type of study	Target population	Statistic sample	Application period	Sample according to gender	Sample according to type of establishment	Responsible organization
The voice of the directors in the covid-19 crisis	Online self-questionnaire reported	Directors of schools imparting regular day education at the levels kindergarten, elementary and/or middle school	N = 424	During the month of August	Distribution of participants who completed the survey is quite similar to the distribution national directors gender of schools	Distribution of participants who completed the survey is quite similar to the distribution national directors by dependence and socioeconomic status of schools	Leadership Program Educational of the Diego Portales University, PUCV Educational Leaders Center of the Pontifical Catholic University of Valparaíso, Center of Advanced Research in Education of the University of Chile

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**Cristián Bellei** is Associate Researcher at the Center for Advanced Research in Education and Professor in the Social Science Graduate School, both at the University of Chile, Chile. He is Doctor of Education from Harvard University. His last books are “Understanding School Segregation. Patterns, Causes and Consequences of Spatial Inequalities in Education” (edited with Xavier Bonal, 2018, Bloomsbury) and “The high school in turbulent times. How has secondary education changed in Chile?” (2020, Lom) He has published extensively about Chilean education, mainly regarding education policy, quality, and equity issues.

**Mariana Contreras** is a Sociologist from the University of Chile; she works as a research assistance at the Center for Advanced Research in Education of the University of Chile. She has conducted research and published about the sociocultural dimension of the school choice and its relationship with the socioeconomic school segregation, and high school improvement and innovation processes.

**Tania Ponce** is Master candidate in Studies in Women, Gender, and Citizenship (University of Barcelona) and Sociologist (Catholic University of Chile). She has worked as a research assistant at the Center for Advanced Research in Education, University of Chile. Her research focuses on gender and education, with a special emphasis on inequity and social exclusion.

**Isabel Yañez** is a Sociologist from the University of Chile and has a Masters in Visual Anthropology from FLACSO Ecuador, with studies in Feminist Geography. Her research focuses on territorial defense, women spatial production, and the visual approach as a social intervention.

**Rocío Díaz** is an Anthropologist from the University of Chile; she works as a research assistance at the Center for Advanced Research in Education of the University of Chile. Her research focuses on education processes and policies, gender in the school context, and qualitative social research methods.

**Constanza Vielma** has a Masters in Psychology of Social Research (University of Granada) and Sociologist (Catholic University of Chile). She has worked as a researcher at the Diego Portales University and the Research Center of the Chilean Ministry of Education. Her research focuses on early childhood cognitive development, and the lifelong effects of education and social inequality.

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# Chapter 4

## Experiences of Moving Quickly to Distance Teaching and Learning at All Levels of Education in Finland



Jari Lavonen and Katariina Salmela-Aro

**Abstract** In this chapter, the teaching and learning in Finnish compulsory education during the COVID-19 pandemic in the spring and autumn terms of 2020 will be analyzed and discussed. First, preconditions, such as teacher and student digital competences and digital infrastructure for switching to distance teaching and learning, will be analyzed. Second, the organization and experiences of teaching and learning during this time are described based on representative surveys conducted during and after the spring 2020 distance teaching period. Finally, teachers', principals' and students' engagement and well-being during the pandemic will be analyzed based on survey data. Preconditions for organizing effective distance teaching and learning during the 2020 spring term were appropriate teacher and student digital competences and digital infrastructure and availability of digital tools. During the pandemic, teachers' digital pedagogy and students' digital competences developed. Moreover, several digital pedagogy and co-teaching innovations were created. However, at the student level, we identified decreased engagement during the pandemic, and at the teacher and principal levels, we identified not only decreased engagement but also increased stress and even burnout. Principals suffered from teachers' stress, whereas teachers suffered from families' inequality in coping with distance learning. All in all, the switch to distance teaching and learning was organized effectively, but the distance-learning period weakened the equality of teaching and the conditions for learning.

### 4.1 Introduction

The COVID-19 pandemic has influenced the education sector all over the world and affected the learning of 1.6 billion children and young people in 200 countries (UNESCO, 2020). The pandemic has engaged researchers, administrators, and teachers in the development of digital pedagogy or digital-pedagogical innovations. Digital pedagogy includes the knowledge and skills needed for using digital tools and

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J. Lavonen (✉) · K. Salmela-Aro  
Faculty of Educational Sciences, University of Helsinki, P.O. Box 9, FIN-00014 Helsinki, Finland  
e-mail: [jari.lavonen@helsinki.fi](mailto:jari.lavonen@helsinki.fi)

platforms or digital environments for teaching and learning, as well as the knowledge and skills needed to support students' engagement, learning and well-being in digital environments (Greenhow et al., 2020). Appropriate digi-pedagogy has helped teachers with instructional design and the use of digital tools and platforms to support students' learning, engagement, and well-being.

Iivari et al. (2020) described an interesting case from spring 2020 in Finland, where two fifth-grade teachers began to work as a team and shared their workload by shifting online class responsibilities during the pandemic. The school days consisted of two to four live lessons a day via Google Meet; half of the lessons were taught by one teacher, half by the other. After a 20-min live teaching session, students had 40–50 min for individual work, after which the class gathered again on Google Meet to discuss the outcomes. All of the day's tasks were sent to students the previous evening. At the end of the school day, the teachers checked pupils' daily tasks in Google Classroom and together planned the lessons for the next day. This type of team-teaching was recognized as engaging for teachers and learners. The reason for success with distance teaching in this case was that, first, both teachers and learners were familiar with the Google Classroom format and had appropriate digital skills and tools. Second, the teachers had quality training and were able to generate solutions to new challenges. Third, the pupils had an internet connection at home, and the school loaned laptops to pupils who did not have one at home. Although the pupils were able to communicate and complete their assignments, the teachers were not able to support the engagement and well-being of all learners. In addition, the students lacked peer support and informal collaboration sessions.

The previous case provides a good example of the use of digi-pedagogy and devices during the pandemic. However, the case does not reflect the full picture of teaching and learning during the pandemic in Finland. In this chapter, teaching and learning in Finnish compulsory school during the COVID-19 pandemic during the spring and autumn terms of 2020 will be analyzed and discussed. First, preconditions, such as teacher and student digi-competences and digi-infrastructure for distance teaching and learning are described. Second, the organization and experiences of teaching and learning during the pandemic are described based on representative surveys conducted during this time. Finally, teacher, principal, and student well-being during the pandemic will be analyzed based on data collected during the pandemic. We will argue in the discussion section that the development of digi-pedagogy strategies beginning in the 1980s, the implementation of these strategies, and masters-level teacher education, which emphasizes the learning of competences needed in professional learning, have made it possible for teachers to transition to teaching online rather seamlessly.

## 4.2 Finnish Education Context

Decentralization and autonomy of municipalities, schools, and teachers characterize the Finnish education context (Simola, 2005). Teachers play an important role in

the Finnish educational system. They are active participants in the design of local curricula as well as physical and digital learning environments and courses and, moreover, assess both their own teaching and students' learning outcomes. This decentralization has made it challenging to formulate state-wide decisions and to provide uniform instructions during the pandemic. On the other hand, decentralization has offered flexibility in decision-making at the local level and has made it possible to take into consideration the local context, such as the current situation of the pandemic in each area or city. This decentralization, without testing and inspectors, could also be a threat to equality. However, politicians and families trust local schools and teachers. This trust is a consequence of well-educated teachers and the availability of general information on the education system. For example, according to PISA assessments, the variation between schools has always been the smallest in Finland among OECD countries (OECD, 2019b).

Educational equality and equity have been important education-related values and aims in Finnish education since the 1970s, at all levels of education. There are no private schools; instead, children and adolescents attend a nearby school. Finnish special-needs education aims to integrate all learners into the same inclusive classrooms and to support their learning. Primary and secondary teachers are responsible for monitoring the individual needs of learners and preparing a pedagogical document in the case of enhanced or intensified support, if needed. Decisions for the type of support, such as a student's integration into an ordinary class or part-time participation in a small group of students, are based on a pedagogical document, which is prepared by a teacher for a student who has special needs (Finnish National Agency for Education [FNAE], 2020a; Finnish National Board of Education [FNBE], 2014). The development of support and special-needs education practices has decreased the number of students who leave school early, from 11 to 7.5% between 2010 and 2019 (Statistics Explained, 2020). Because of decentralized decision-making and equality as a value and aim, novel solutions could be created to support special-needs students during the pandemic.

Teachers in Finland in primary, lower secondary, and upper secondary schools are required to have a master's degree. Primary teachers (grades 1–6) have been educated in master's-level programs at eight traditional universities for more than 40 years, while secondary teachers (Grades 7–12) have been prepared in master's-level programs for more than 100 years (Niemi et al., 2012). An essential characteristic of teacher education in Finland has been its emphasis on research (Eklund, 2018; Tirri, 2014). This orientation supports teachers in the local planning and assessment processes and the organization of inclusive classrooms. The use of digital tools in pre-service teacher education is integrated into the courses and teaching practice. This could support student teachers in adopting the basics of digi-pedagogy. The development of the use of digital tools and environments in teacher education has been organized through long-term strategic actions and through several research projects. For example, during 2017–2018, at the University of Helsinki, €240,000 was used for the development of digital learning environments and tools and for increasing teacher educators' digital competences.

### 4.3 Preconditions for Distance Teaching and Learning During the Pandemic

There have been six official national-level digital education or Information and Communication Technology (ICT) strategies and hundreds of development projects during the last 35 years in Finland. Since 2015, these strategies have been integrated or embedded in other strategies, such as government programs or curriculum documents (Mahlamäki-Kultanen et al., 2014). The national framework curriculum for compulsory education emphasizes as a part of the description of transversal competences that students should be able to do the following: learn to use digital tools in diverse and creative ways; collaborate and network with digital tools; and work with data, information, and knowledge (FNBE, 2014; Ministry of Education and Culture [MEC], 2017).

In addition to strategies and curriculum, resources have been available to aid the implementation of strategic aims. For example, during the years 2016 – 2020, just before the COVID period, the government allocated €100 million for educational improvements. These funds were used for increasing teachers' and students' digital competences. For example, 27 million euro was allocated for the development of teachers pre-service education and for strengthening the connection between faculties of education and schools. About the same amount of money was allocated to the tutor teacher model. The rest were allocated for schools, to support special education and the use of digital tools. Over the past 20 years, the Finnish National Agency for Education has annually allocated about €15 million for supporting the development of digital learning environments and for supporting teachers' professional learning of digi-pedagogy through training and development projects (Kumpulainen, 2017; Niemi, 2015). Altogether, 2,500 tutor-teacher positions were established with funding from the *Basic Education Forum* (MEC, 2018a) in year 2017, and tutor teachers were educated to support teachers in the use of digital tools, organize inclusive education and support the learning of transversal competences in their own classrooms. A tutor teacher has less teaching hours than other teachers in order to have time for supporting colleagues.

Finland has a robust digi-infrastructure, and Finnish people are active users of digi-services. According to Digibarometer 2019 (Ali-Yrkkö et al., 2019), Finland has ranked third in international comparisons over the last two years in use of the internet; people younger than 55 report using the internet frequently (Tilastokeskus, 2019). According to the European Commission (2018), Finnish people rank highly in the area of general digital skills and are global leaders in advanced digital skills.

According to the IEA International Computer and Information Literacy Study 2018 (Frailon et al., 2019), all schools in Finland have access to the internet, and 93% of compulsory school students have an e-mail account for school-related use. Both percentages are significantly above average among the countries participating in the study. In Finland, almost all schools have versatile digital tools available, including software for working with text, numbers and pictures, as well as learning management systems. Altogether, 83% of schools reported that it is possible to have

digital tools in the classroom, and there are computers in one-third of all classrooms at all times. In the use of the internet in education, Finland ranked fourth, after Sweden, the United States, and Estonia (Ali-Yrkkö et al., 2019).

Tanhua-Piironen et al. (2019) conducted a national follow-up study considering students' and teachers' digital competences using a representative sample. A total of 4,513 teachers and 4,135 s-grade, 4,992 fifth-grade and 5,046 eighth-grade students completed the study. Consequently, the follow-up study provides a realistic picture of the use of digital tools in teaching and learning before the pandemic. The follow-up study included both survey questions and items measuring digital competence in real situations. The actual situations were realized in a web environment. According to the study, 66% of second-graders have access to a tablet or other digital tools at school, while 11% of fifth-graders have their own tablet and 74% of them were able to use a shared tablet or smartphone at school. However, computers and tablets are not used every day in all classrooms. The use of digital tools has too often been traditional, such as searching the internet, writing, and game-based learning. However, 43% of second-graders and 44% of fifth-graders have tried more sophisticated uses of digital devices, such as coding and robotics, at school.

According to the follow-up study (Tanhua-Piironen et al., 2019), eighth-grade students have, on average, used daily digital tools for communication, social relationships, and entertainment. On average, they have used digital tools 'sometimes' for producing and sharing digital content. Boys used digital tools for digital learning daily, but girls only once a week, on average. The Organisation for Economic Co-operation and Development [OECD] (2019a) TALIS 2018 survey showed similar findings related to the use of digital devices in Finland. However, there were differences between the competences related to the use of digital tools of different socio-economic background students. This difference was recognized to increase the inequality in Finland (Ahtiainen et al., 2020; Karvi, 2020). According to PISA 2018 (OECD, 2019b; Leino et al., 2019), Finnish 15-year-old students spent an average of 74 min at school and two hours and 50 min out of school on the internet. About 50% of all students searched the internet for information; 65% of students completed their homework with a computer at least twice a month and 90% of them used the internet to complete their homework at least twice a month.

The IEA International Computer and Information Literacy Study 2018 (Fraillon et al., 2019) evaluated the level of 15-year-old students' digital skills via a digital competence test. According to the study, the percentage of correct answers was highest in Korea (77%), Denmark (72%) and Finland (70%) on various test items. However, Saarinen et al. (2019) recognized the challenges of integrating digital tools into learning. Teaching and learning methods used in compulsory education were largely based on books, and digital tools were too often used just for completing assignments.

According to the national follow-up study (Tanhua-Piironen et al., 2019), the digital competence of teachers has markedly improved in terms of skills. Approximately 38% of teachers feel that they have an advanced level of digital competences, and only 10% of teachers feel that they lack digital competences. A good command of

digital competences among teachers is still more prevalent among the younger generations and male teachers. There is also variation in teachers' competences between municipalities. Teachers reported that they used digital learning environments on average in half of the lessons and that they presented information with the help of digital tools in most lessons. According to the International TALIS 2018 survey (OECD, 2019a), Finnish teachers have made good progress with the use of digital tools in teaching and learning and in their digi-competences.

#### 4.4 Organisation of Teaching and Learning During the Pandemic

The Finnish government, together with the president, declared a state of emergency in line with the Emergency Powers Act<sup>1</sup> due to the COVID-19 pandemic in mid-March 2020 to obtain emergency powers and centralize decision-making. This was the first time a decision to use this act was made since the Second World War, and it was not taken lightly in a country which is heavily committed to a decentralized decision-making process in education, health, and social care. The government decided to close schools from March 18th until May 13th and then made the transition to distance teaching and learning (Government, 2020). First-, second- and third-grade pupils were allowed to go to school. According to the guidelines of the Finnish Agency for Education (FNAE, 2020b), teaching and learning was aimed to continue according to compulsory school curricula during the distance teaching period but organized in alternative ways, including the use of various digital learning environments and solutions and, when necessary, independent learning. However, on average one fourth of the teachers lowered the level of requirements for the evaluation and grading (Ahtiainen et al., 2020). This was considered acceptable by stakeholders and families (HS, 2020a, b, c).

During the distance teaching period, the main platform for informing parents and pupils in primary school was the communication platform Wilma.<sup>2</sup> The platform was recommended for giving homework, providing feedback, and communicating with parents. The most common virtual learning environments or platforms used in distance teaching were Moodle, Google Classrooms, Ville,<sup>3</sup> Teams, O365, Skype, and Zoom, depending on the education provider (YLE, 2020a). Education technology companies provided e-learning materials at no cost to teachers, for an estimated cost of more than €10 million, which is 15% of schools' annual total budget for learning materials (Suomen Kustannusyhdistys, 2020).

According to the Finnish National Agency for Education, primary, lower, and upper secondary teachers changed their teaching to distance rather easily (FNAE, 2020b). The high levels of teacher and student digital competences and the quality

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<sup>1</sup> [https://www.finlex.fi/fi/laki/kaannokset/1991/en19911080\\_20030696.pdf](https://www.finlex.fi/fi/laki/kaannokset/1991/en19911080_20030696.pdf).

<sup>2</sup> <https://www.visma.fi/inschool/wilma/>.

<sup>3</sup> <https://oppimisanalytiikka.fi/ville>.

of the digital infrastructure in Finnish society supported this change. School laptops were commonly loaned to students during the pandemic. However, it was estimated at the beginning of the COVID-19 pandemic that tens of thousands of students were without a computer. For this reason, a large-scale project, supported by the president of Finland, was launched in which companies donated obsolete laptops directly to students (YLEisradio [YLE], 2020a, b). Another reason for the rather successful change to distance teaching was the tutor-teacher model, which was implemented in 2017 to support the professional learning of teachers, especially in learning to use digi-tools and digi-platforms in their own classrooms.

After May 13th, children and adolescents returned to compulsory schools. However, universities continued with distance learning and teaching. Municipalities (providers of education) implemented strict rules for preventing the spread of COVID-19. For example, individuals were advised to wash their hands thoroughly, and parents were not allowed to go inside classrooms. It was recommended that students spend their entire school day with the same familiar group and have their meals in the classroom, not in the lunchroom (Helsingin Sanomat [HS], 2020c).

The Ministry of Education and Culture (MEC, 2020) updated its instructions related to the coronavirus pandemic at the beginning of August 2020. The ministry emphasized that the most important measure was to prevent infections through good hygiene, avoiding unnecessary close contact between students and arranging teaching premises more spaciouly than usual. Staff members were also instructed to avoid gatherings, which meant, for example, that teachers should hold their meetings remotely. Meals were advised to be arranged individually with the pupils' own group. According to the recommendations, those who show symptoms of COVID-19 infection must remain at home. The recommendations have supported local actors in seeking the best ways to organize schooling in a safe and well-functioning manner.

When the second wave of the pandemic in October 2020 was slowly coming stronger, the government emphasized that the pandemic should be controlled primarily under local and regional decisions and measures according to the Communicable Diseases Act (FNAE, 2020c). Therefore, the decisions related to COVID-19 restrictions, such as quarantines and changes to distance teaching, were allocated to the local level, as usual. At the beginning of December 2020, some compulsory schools changed, totally or partially, to the distance model. During the autumn, there have been no plans to use the Emergency Powers Act again. This was because the lessons learned during the springtime and one of the lowest infection rates in Europe.

## **4.5 School-Level Teaching and Learning Experiences During the Pandemic**

Ahtiainen et al. (2020) collected representative data in May and June 2020 from principals and teachers from all Finnish municipalities as well as from students in grades 4–10 and parents and guardians of students in grades 1–10. According to the



survey, the rapid transition to the distance-learning period went surprisingly well. However, students experienced distance learning in different ways; some students estimated that distance learning suited them well, and they felt that learning at home was more effective than at school. One-third of primary school students estimated that they learned less than usual during the distance-learning period. Most teachers felt that the workload was higher than in a normal situation. On the other hand, teachers felt that their own digital skills had developed during the distance-teaching period. Moreover, one-third of teachers reported that they have increased collaboration with other teachers. Nearly all principals reported that the school has provided opportunities for teachers to share their experiences with distance-teaching arrangements. The challenges were most often related to students' devices and teachers' equipment and network connections. Nearly two-thirds of principals estimated that at least half of the school's teachers had reported pedagogical challenges in implementing distance learning. Parents and guardians have had to take more responsibility for their children's learning than usual, and about half of them felt that this increased their stress.

Before publishing the evaluation report on the influence of the pandemic on compulsory and secondary education, the Finnish Education Evaluation Centre (Karvi, 2020) published the primary outcomes of the evaluation on their web page and in a webinar. A representative random sample was collected from 70 compulsory school principals and 185 primary teachers in May. In addition, 1,792 students in sixth and ninth grades answered the survey in October. Students rated physical education as the easiest school subject and mathematics as the most difficult to learn during the distance learning period. Students in primary and lower secondary schools named life management, such as making a personal schedule, learning difficulties or lack of support, and lack of opportunities or space to study at home as the main challenges during the distance learning period. Also, one-fifth of the teachers estimated that students have had many challenges in planning their learning and in independent learning. However, students reported that retrieving information independently, taking responsibility for their own learning and establishing a schedule for their learning was engaging.

According to teacher and student evaluations, there was a lack of support, especially among special-needs students, and a minor lack of digital tools at students' home. There were especially challenges among students who were not native Finnish or Swedish speakers. The importance of cooperation between home and school was emphasized in all municipalities, especially for identifying the need for student support in compulsory education. However, the support offered to students varied between municipalities (Karvi, 2020).

More than half of the teachers said that they had received support from their employer during the pandemic. One-third of teachers reported that they needed more guidance on organizing lessons remotely, and a quarter felt that they had not received enough support and guidance in using the hardware and software. The role of one's home environment in supporting distance learning was emphasized by the teachers. The distance learning period accelerated the development of teachers' and students' digital skills (Karvi, 2020).



The Karvi (2020) evaluation provides good examples of how teachers have started to prepare themselves and students for the second wave of distance learning. Teachers explain how they have used digital tasks in parallel with traditional teaching methods in order to facilitate a possible transition to distance learning in the spring or autumn 2021 terms. There were also local-level decisions related to distance teaching of a school or a classroom during the autumn of 2020. One teacher explained how he had three students in the class in one of his groups while the rest of the group was distance learning. The teacher taught those in the classroom while those at home watched the video of the classroom, all at the same time.

In the research reports (Ahtiainen et al., 2020; Karvi, 2020) and in the Finnish newspapers (HS, 2020a, b) there are several examples of how teachers and municipalities have overcome challenges related to distance teaching and created digital pedagogy innovations. While challenges related to the distance teaching and learning period have been discussed, examples of positive outcomes has been more common. Teachers and directors of education in the municipality level have described, for example, the following experiences:

- *Some of our students are really skilled distance learners and they are able to achieve their goals independently. There are also students who have had problems with learning or social control and self-control (director of education in a city).*
- *The readiness of parents to help students during the distance learning varied. For example, immigrant background parents, who had lack of language skills were in trouble (director of education in a city).*
- *In the spring, we were able to share laptops to all students. I always started the distance learning lessons with a video connection and checked that everyone's connection was working and students were in front of the laptop. During my lessons I used break-out-rooms and other approaches, which supported collaborative learning (lower secondary biology teacher).*
- *During autumn, I used Google Classroom in parallel to normal teaching in order to facilitate a possible transition to distance learning (lower secondary geography teacher).*
- *Remote meetings engaged second-graders in learning. It looked like they had forgotten that they were in a distance class (primary teacher).*
- *Some of the students' workload should be lightened and some would like to be given more to do. However, I try to avoid pressure to families from the school side (primary teacher).*

Students have described, for example, the following experiences:

- *After the school switched to distance learning, I got an idea and sent a suggestion to my class WhatsApp group: "I will make a discord server" (upper secondary student).*
- *We used Google Meet as a learning platform. It was working well (lower secondary student).*

## 4.6 Teacher, Principal and Student Well-Being During the Pandemic

Salmela-Aro et al. (2020) collected data from all Finnish principals during April and May 2020 on digital skills, work-related well-being, and remote learning (n = 644,

response rate 54%). Three groups of principals were identified: engaged (36%), high stress (46%) and burnout (18%) groups. The results further showed that the number of burnout principals had increased and the number of engaged principals had decreased. Engaged principals appraised that teachers had good digital skills and that the change to distance teaching was smooth, whereas the burned-out principals felt that teachers had challenges with their digital skills and that the transition to distance learning was challenging.

Data among teachers was also collected both in the spring and late fall of 2020 (Salmela-Aro et al., 2020). Both times, about 1,500 teachers completed the questions about remote teaching, work-related well-being, and digital skills. During the spring of 2020, the number of engaged teachers was 41.8%; engaged but exhausted, 11.2%; at risk of burnout, 37.2%; and severe burnout, 9.8%. The situation was even more stressful among the teachers in the Fall, as the number of engaged teachers was only about 30% and severe burnout about 20%. The better the teachers' digital skills, the more likely they were to be engaged, whereas the more digital challenges they experienced, the more likely they were to feel burned out. In addition, the more the teachers felt that families were suffering from COVID-19 and had difficulties with remote learning, the more likely the teachers were to feel stressed or even burned out. Thus, the inequalities among families had severe implications for teacher well-being. There is also evidence about the variation in the support families can offer to their students learning at home in Finland. The higher the socioeconomic status of the family is, it is more common for the students' engagement in online reading (OECD, 2019b; Leino et al., 2019). Unfortunately, the teachers in the burnout or risk of burnout groups were most likely to leave the teaching profession, thus demonstrating the severe implications of burnout. However, principals' support and motivating leadership was one of the key supporting aspects of teachers' well-being.

Even before the pandemic, student engagement in science, technology, engineering, and mathematics (STEM) learning was a deep concern globally, and several major reports by the OECD (2019b) connected engagement with disinterest in STEM and its attractiveness as a career option. Recently, in examining the impact of the pandemic on learning, several surveys have shown that students report feeling disinterested, bored, and socially isolated when spending long hours in virtual classes. These surveys have given rise to a new worldwide concern of not only 'learning loss,' but also well-being loss. Our view of academic engagement in STEM is situational, and not all activities are likely to have the same effect on students' social, emotional, and academic learning. The approach identifies three constructs critical for enhancing student engagement that are grounded in the psychological literature: interest, skill, and challenge. Interest is the psychological predisposition for a specific activity, topic, or object; skill is the mastery of a set of specific tasks; and challenge is the willingness to take on a difficult, somewhat unpredictable course of action. When students are fully engaged, they tend to concentrate and feel in control (Schneider et al., 2020). When academic interests, skills and challenges are in balance, these moments are called optimal learning moments (OLMs), or situationally specific times when a student is so deeply engrossed in a task that it feels as if time is flying by. This idea is similar to how Csikszentmihalyi (1990) describes flow as being completely

immersed in an activity; for this study, we restrict the definition of flow to classroom situations that elevate students' academic engagement and are positively related to social and emotional learning. Our research shows that OLMs occur about 15–20% of the time in STEM lessons; our interest is to examine how often they occur when students are learning online. However, during the COVID-19 pandemic, the results showed that OLMs happened only about 5% of the time. (Salmela-Aro et al., 2020).

## 4.7 Discussion

In the spring of 2020, the shift to distance teaching and learning happened rather smoothly; teachers' and students' digital competences developed, and local distance teaching, co-teaching and digi-pedagogy approaches were created. This view was emphasized, especially in the Ministry of Education and Culture and National Agency of Education reports (FNAE, 2020c). However, the distance learning period weakened the equality of teaching and the conditions for learning, especially, the teachers reported that they were not able to support the engagement and well-being of all learners, especially students with special needs. In addition, some of the students lacked parents and peer support and informal collaboration sessions. (Ahtiainen et al., 2020; Karvi, 2020). Moreover, the level of burnout among principals, teachers and students increased, and the level of engagement decreased (Salmela-Aro et al., 2020). Teachers and students experienced distance learning in different ways; for some, it was more stressful than studying at school, while others felt that their well-being improved. The most challenging situation has been among special-needs students because of the lack of support. However, these students were able to continue learning at school with the help of special-needs teachers. In addition, students who faced an educational transition period during COVID-19 suffered more, such as on evaluations and exams.

There are several reasons why the shift to distance teaching was overall rather successful, although there were challenges with equity. First, all Finnish teachers are educated in masters-level programs, and their digital skills and digi-pedagogy competences are at an appropriate level. In practice, all primary and secondary teachers are qualified and have a master's-level education and as a part of this education the teachers have developed willingness and competence for continuous professional learning. According to a recent national follow-up study (Tanhua-Piiroinen et al., 2019), about 50% of secondary and primary teachers evaluated that they have basic digital competences and about 40% advanced competences. König et al. (2020) found similar results based on a survey they conducted in May and June 2020 in Germany. They recognized that teachers' digi-competence and opportunities to learn those competences are instrumental in adapting to online teaching. Quality teachers, combined with local level decision making in decentralized education system have made it possible to make decisions at the teacher level, how to organize distance teaching, what kind of digi-pedagogy is used and how teachers are collaborating. Therefore, the pandemic provided an opportunity for teachers to experiment with

new ways of teaching. The developed digi-pedagogy methods have been used as a part of classroom teaching during the autumn. There are two main reasons for teachers' appropriate digi-pedagogy competences in addition to their master-level education. There have been digital strategies, both separate from and integrated into government programs and school curricula since the 1980s, which have guided teachers and creators of learning materials and platforms. Second, there have been resources for implementing these strategic ideas in terms of support to teachers' professional learning. However, if there was a lack of digital competences among teachers in a school, it was one of the main reasons for principals' stress during the COVID-19 pandemic.

It is clear that the digi-skills of students should be continuously developed, although the public and policy debate around students' use of digi-tools and media has long been shaped by the persistence of two myths: the perception of children as 'digital natives' who are innately tech savvy just because they grew up with digital technologies, and the contrasting preoccupation with children as innocent and vulnerable subjects in need of protection from online risks (Barbovschi & Marinescu, 2013). Accordingly, between 2000 and 2010, the research agenda prioritized topics such as children's access to and use of the internet and their exposure to online risks. The tension between children as competent users or innocent victims remained implicit and unresolved until the debate moved beyond the initial focus solely on risks and started to address the opportunities and challenges of the internet and digital technologies on children's agency, rights, and well-being (Livingstone & Third, 2017; Livingstone et al., 2018). It is within this more comprehensive framework that situates the internet as an integral component of children's everyday life through which children engage with the world (Livingstone et al., 2018) and understanding what skills enable children to fully harness online opportunities and cope with risks has become crucial. Recently, in a large European Union (EU) Horizon 2020 youth digital skills project, four key digital skills were identified: technical, information search, interaction skills, and creative production skills (ySkills, 2020). The learning of these skills is recognized as a goal in the Finnish Basic school curriculum (FNBE, 2014).

The third reason for the successful transition to distance teaching was the level of good digital infrastructure in Finland. According to the IEA International Computer and Information Literacy Study 2018 (Fraillon et al., 2019), 99% of schools in Finland have access to the internet, and 93% of students have an e-mail account for school-related use. In Finland, almost all schools have versatile digital tools available, including software for working with text, numbers, and pictures as well as learning management systems. Laptops were loaned to students who did not have a laptop at home, and companies also donated laptops to students. König et al. (2020) also emphasized the availability of digital tools as a precondition for success in distance learning.

The level of digital infrastructure at the school level could be compared to digital infrastructure in society. One recent international comparative study conducted by the International Digital Economy and Society Index (I-DESI, 2018) of EU Member

States and 17 non-EU countries aimed to measure the general level of digital infrastructure and use of digital tools in society through cross-national representative quantitative surveys. The index focuses on five core dimensions: connectivity, use of internet services, integration of digital technology, digital public service, and human capital (in terms of digital skills). Overall, findings from the I-DESI show that while on a global scale Europe compares well with other major economies, significant differences persist among European countries. Finland, Sweden, the Netherlands, and Denmark were recognized as the most advanced European digital economies, while Bulgaria, Romania, Greece, and Poland scored the lowest. Consequently, there is a correlation between the level of digital infrastructure in the education sector and in society.

The fourth reason for the successful transition to distance teaching is the strategic planning of digital teaching and learning and the use of resources for implementing these plans. As previously mentioned, Finland has had both separate digital strategies and digital strategies that have been integrated into government programs and school curricula since the 1980s. These strategies have been designed collaboratively, accounting for many stakeholders, such as teachers, municipality unions, and organizations, at the national level. The process orientation of the strategy work has included the preparation of a local-level interpretation of the national level strategy (Mahlamäki-Kultanen, et al., 2014). This local-level interpretation has supported teachers in the adoption of new ideas. There have always been development projects and support for teachers' professional learning in the context of strategies, especially digi-pedagogy. For example, the program of the current government and the Right to Learn project emphasize the importance of education equality and equity and the development of digi-pedagogy. New governments have continued the education policies and measures of the previous governments. This type of long-term continuity in policy is important for schools, teachers, and students. The policy and planned measures are to a great extent accepted by stakeholders, such as the Association of Finnish Local and Regional Authorities (2019), Finnish Education Employers (FEE; 2019) and the Trade Union of Education (OAJ; 2019). The FEE even emphasizes the importance of quality support to students with special needs or pupils at risk of marginalization/exclusion to achieve high-quality reading, writing and mathematics competences.

In order to be ready for the next crisis in education, important policy and school practice issues must be addressed. Most important is to continue to follow a long-term education policy that focuses on equity and quality of education. Equity means that all teachers, including special-needs teachers, should continuously learn digi-pedagogy skills; likewise, all students should learn digi-skills. Digital platforms and digi-environments should also be used in classroom teaching. Second, teachers and students should have easy access to digi-tools. Education providers and schools should continuously update these digital tools and infrastructure. In addition, we need to promote the socio-emotional skills of grit, curiosity, resilience, emotional regulation and social competence among students, teachers, and principals to support their engagement and well-being. These are the key resources buffering individuals from stress during future challenging demands. Preparedness for possible future setbacks

can promote both students' and teachers' well-being and engagement. Moreover, the most vulnerable groups, such as those at risk of marginalization, those experiencing educational transition or those with special needs, require more resources and support. This view was especially emphasized in the study of Ahtiainen et al. (2020): support of students who have special needs, either with virtual tools or face-to-face instruction, is essential in the learning process. The learner needs the support of both the teacher and the group, and this can be done in many different ways.

The most important aspect of the policy is the continuing of quality teacher education. Teacher education programs should be continuously improved and account for changes in society and labour markets, like the increasing use of AI in all sectors. High-quality teacher education and its continuous development is the only way to guarantee that teachers can easily switch to distance teaching or make other rapid changes at school. Teachers' continuous learning of digi-skills, including the skills needed in the use of digital platforms, could be supported by continuous learning services and teachers' collaborative professional learning activities. Similarly, Darling-Hammond and Hylar (2020) argue that investing in high-quality teacher education, transforming teachers' professional learning opportunities to match current and future needs, supporting the mentoring and development of new teachers, and creating time for educators to collaborate with each other and key partners is critical. Moreover, principal education needs to be updated to include new competencies to lead distance teaching and learning.

In addition to formal continuous learning and the support of tutor-teachers, teachers benefit from local and national networking. An example of a network is the Innokas Network.<sup>4</sup> It is a teacher network from 100 municipalities that encourages schools to arrange their own activities supporting the learning of 21st-century competences, including digital competences. Another important topic within the network is inclusive education through the use of digital tools and the personalization of learning (Sormunen, 2020). The Innokas Network supports schools by arranging trainings, consulting, and events in different parts of Finland. Today, the network comprises over 600 schools all over Finland. Another good example of how teachers are supported in the use of digital tools and in inclusive education is the tutor-teacher model. Some 2,500 tutor-teacher positions were established in Finnish municipalities and financed by the Ministry of Education and Culture.<sup>5</sup> In total, €30 million was allocated in 2017 and 2018 to help municipalities hire and train tutor teachers. Since 2018, there has been some financing available from the state, but municipalities have also financed this model of support themselves. In a similar way, Moorhouse et al. (2020) argue based on distance learning experiences in Hong Kong during the COVID-19 pandemic that school-based professional support is essential.

Based on the national surveys completed during the pandemic, practical guidelines could be offered if distance learning is implemented again. More attention should be given to supporting students individually and to guiding students in peer support and collaboration (c.f., Ahtiainen et al., 2020). Teacher collaboration and networking

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<sup>4</sup> <https://www.innokas.fi/en/>.

<sup>5</sup> <http://www.oph.fi/rahoitus/valtiovastukset>.

should also be supported. Teachers at the same grade level in primary school or those who teach the same subject at lower secondary schools could benefit from such collaboration. They can plan lessons together, and one teacher could teach the lesson to all students in the same grade. Others can support the education of students with special needs (c.f., Iivari et al., 2020). International collaboration is also needed to identify the best practices for distance teaching and learning and addressing future crises.

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**Dr. Jari Lavonen** is a Professor of Science Education at the University of Helsinki, Finland. He is currently a director of the National Teacher Education Forum and chair of the Finnish Matriculation Examination Board. He has served on several national level advisory boards, such as PISA and TALIS advisory boards, and in the National Evaluation Council. He is a Distinguished Visiting Professor at the University of Johannesburg. He has been researching both science and technology and teacher education for the last 31 years. His publications include 150 refereed scientific papers in journals and books, 140 other articles, and 160 books on education for science teachers and science education.

**Dr. Katariina Salmela-Aro** is a Professor of Educational Sciences and Educational Psychology. She was recently nominated as the Academy Professor. She is visiting professor in School of Education, Michigan State University, US and Institute of Education, University College London, UK. She is the advisory board of OECD Education 2030. She is the PI on several Academy funded projects, Finnish PI of several EY funded projects such as Horizon2020 YSkills, Marie Curie Innovative training network G-Versity and COORDINATE Growing up in Digital Europe. She has over 250 refereed papers and her Google scholar h-index is 76. She has been studying motivation, engagement, and socio-emotional skills during the last decades.

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# Chapter 5

## Covid-19 and Education on the Front Lines in Japan: What Caused Learning Disparities and How Did the Government and Schools Take Initiative?



Kazuaki Iwabuchi, Kouki Hodama, Yutaka Onishi, Shota Miyazaki, Sae Nakae, and Kan Hiroshi Suzuki

**Abstract** While the COVID-19 pandemic posed unprecedented challenges to the education system of Japan, the government and schools took necessary measures to combat the outbreak and ensure student learning continued. The temporary school closure, following the state of emergency, continued for 2 months, from April through May of 2020. Even after the declaration was lifted in May 2020, schools adopted the new-normal way of operations. By shortening the summer break and holding alternative classes, elementary, junior, and senior high schools, except for universities, returned to normal while the COVID-19 pandemic was settling down, and ended the semester regularly in December 2020. The temporary closure, however, led to a huge disparity in implementing online classes, depending on availability of personal laptops in schools. Many private schools, and a substantial number of public schools established by innovative local governments, such as Saga Prefecture and Shibuya Ward, were successful in transitioning to online learning. However, most public schools were unable to hold online courses due to the lack of facilities both in schools and at student households. Aware of the disparities, the government brought forward a policy initiative to distribute personal PCs to all elementary and junior high school students, and to supply high-speed IT networks to each school, with an expected completion of March 2021. In this chapter, we will explore various disparities in depth, particularly underlining the relationship between ICT environments in schools and the issue of school founders. Additionally, we provide an overview

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K. Iwabuchi (✉)

International & Transcultural Studies, Teachers College, Columbia University, 525 West 120th Street, New York, NY, USA

e-mail: [ki2230@tc.columbia.edu](mailto:ki2230@tc.columbia.edu)

K. Hodama · Y. Onishi · S. Miyazaki · K. H. Suzuki

The University of Tokyo, Bunkyo City 113-8654, Tokyo, Japan

S. Nakae

Keio University, Minato 108-8345, Tokyo, Japan

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on how the government and schools coped with the crisis, capitalized on the policy initiatives, and utilized available resources. As a concluding remark, we aim to leave room for optimism by taking this pandemic as an opportunity to reconsider and reimagine education. *Note:* This chapter has nothing to do with operations of organizations that respective authors belong to, and the views expressed in this chapter do not represent organizations', but are authors' own.

## 5.1 Introduction

In the past decade, Japan has experienced a series of catastrophes, among which the Tōhoku earthquake and tsunami in 2011 still remain a vivid part of the country's memory. Despite a number of natural disasters, the government and people have nevertheless been coping well and fighting back against the difficulties. Despite these experiences, however, the COVID-19 pandemic posed formidable challenges across the nation's healthcare, economy, politics, and above all, education system. In this chapter, we aim to describe how Japan dealt with this unprecedented crisis, and particularly aim to portray the response of the government and of schools to the pandemic.

In the first section, we overview the timeline of the COVID-19 pandemic. What marked the case of Japan was that the school closure happened only once and continued for a relatively short period. Even so, the impact of the closure caused immense damage to student learning opportunities. In the second section, we unpack the mechanism of how disparity was produced along different lines in Japan's education system. While presenting the detailed overview of the disparities, however, we also portray the Ministry of Education, Culture, Sports, Science and Technology's policy initiatives and various supportive measures aimed at closing learning gaps. While this crisis had detrimental effects, particularly on vulnerable populations, such as single parents, it is important not to overlook the positive sides of the pandemic and take this event as an opportunity to rethink education. In the concluding section, we will present implications for future policymaking.

## 5.2 The COVID-19 Pandemic and Japan's Response

We will first overview the government and school responses to the COVID-19 pandemic. In the case of Japan, the Ministry of Education, Culture, Sports, Science and Technology (hereafter, MEXT) promptly provided policies and guidelines on how to deal with the pandemic, which schools followed in a rather uniform way. On January 28, 2020, the government of Japan classified COVID-19 as a designated infectious disease, which require specific medical treatments, epidemiological investigation, and outbreak control. In the beginning of February, the government faced the outbreak within a foreign cruise ship at the port in Japan and dealt with

the immigration procedures for those infected with COVID-19. Although the MEXT expressed reluctance at the beginning, starting on March 2, elementary, junior high, and senior high schools across the nation closed in a coordinated way due to the request of then-Prime Minister Abe. However, the impact of this school closure was relatively small because it coincided with spring break. Facing the spread of the infection and continuing school closures, on March 31 the MEXT announced the acceleration of the Global and Innovation Gateway for All (hereinafter, GIGA) School Initiative, to complete the distribution of PC/Tablet devices to all elementary and junior high school students by March 2021. The original timeline of the initiative was to distribute within 4 years, starting from the fiscal year 2020.

On April 7, at the very beginning of the school year, a state of emergency was declared in 7 prefectures (out of 47 in total) covering mostly urban cities (including Tokyo). While schools continued to be closed in those prefectures, the state of emergency was extended across the nation on April 16, and thus most schools went into a temporary closure. The school closure, despite being temporary, led to a huge disparity in student learning between schools. For example, some public schools had been implementing online education since before the pandemic, and some private schools were able to set up online education immediately after the temporary closure. These schools were able to deliver online classes on the premise of one device per student. On the other hand, most of the public elementary and junior high schools, without online education in place, had to distribute learning materials by sending in hard copies to students at home, resulting in a noticeable gap between public and private schools. Nevertheless, some exceptional cases existed, wherein public schools had allocated one device to each student a few years ago and had lent Wifi routers to improve the network environments even in the student homes. These cases include Saga Prefecture and Shibuya Ward in Tokyo. While these were exceptions, since there are 249 elementary and junior high schools in Saga (Board of Education, Saga Prefecture, 2017), and 34 in Shibuya (Shibuya City, n.d.), these cases highlight that a substantial number of public schools had been ready for online education.

On May 4, the state of emergency was extended until the end of the month, and most schools remained closed. Shortly afterwards, on May 14, the state of emergency was lifted in 39 prefectures, followed by the Greater Tokyo Area on May 25. Schools began to resume in June, but in major cities, many schools took measures to shorten in-class hours to reduce contact between students. In addition, there were many schools that divided classes into two groups and introduced staggered hours for attendance. Meanwhile, in less impacted regions, schools returned to normal with a regular attendance of students. In July and August, most schools shortened their summer break and held alternative classes to make up for the delay in the curriculum due to the temporary closure. Fortunately, by the beginning of the second semester in September, most schools were able to catch up and return to normal, successfully reaching the end of the semester in December.

When the COVID-19 outbreak temporarily waned in September, the government of Japan launched the *Go To Travel* campaign, where the government partially covered the travel costs of citizens visiting less impacted regions. This policy intended to revitalize the tourism industry, which was facing significant damage. However,

the number of daily infected cases began to resurge around November, resulting in the nationwide outbreak. On January 7, 2021, the government declared the state of emergency for the Greater Tokyo Area, and on January 13, extended the declaration to 7 prefectures. This declaration focused mainly on restaurants, and thereby did not require any school closure. On January 16 and 17, 550,000 high school students were able to take the Common Test for University Admissions as originally scheduled (Table 5.1).

### **5.3 Home-Based Learning During the School Closure and MEXT's Policy Initiatives**

In Japan, thus far, school closure has only happened once, and for a relatively short period. The efforts of schools and the MEXT enabled the delay in covering the curriculum to be resolved by the end of summer 2020. Even so, the school closure disrupted student learning, and the impact was disproportionately larger in some regions, and among certain types of schools. This section will unpack the mechanism of how this disparity emerged, and delineate key factors contributing to this disparity. First, we provide the contextual information on Japan's decentralized education system, where schools are founded and run by different kinds of actors. Then, we move on to describe disparities in student home-based learning during the school closure, first by school type, and second by prefecture. While illustrating the learning gap, we draw from surveys and highlight potential key factors in explaining the disparities. While the COVID-19 pandemic undoubtedly disrupted student learning, we also highlight policy initiatives from the MEXT that have the potential to alleviate the negative impact of the pandemic.

#### **5.3.1 Background: Japan's Education System**

Before diving into a description of the pandemic's impact, we will first provide a brief summary of Japan's education system. As of 2020, the Japanese education system houses over 15 million children and students, from kindergarten to high schools (MEXT, 2020b). The levels of elementary and junior high schools constitute compulsory education. While the national curriculum stipulates what students learn, students rarely repeat grades, despite whether they have actually learned the curriculum or not, particularly at the level of compulsory education<sup>1</sup> (Ikeda & García, 2014). This suggests students, despite the school closure and loss of learning opportunities, would be nonetheless promoted to the next grade. The senior high school

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<sup>1</sup> In Japan, compulsory education includes two levels: (i) six years of primary education (corresponding to 6–11 years old); (ii) three years of lower secondary education (corresponding to 12–14 years old).

**Table 5.1** Timeline of the COVID-19 crisis and Japan's response

Date	Topic/Event
2020/1/28	COVID-19 classified as designated infectious disease
2020/2/4	MEXT's notification regarding students returning from China
2020/3/2	MEXT's notification regarding school closure across the nation
2020/3/31	Minister of MEXT expressed intention to accelerate GIGA School initiative and promote home-based learning
2020/4/1	Tokyo Metropolitan Government postponed the reopening of schools to May 6
2020/4/7	Declaration of state of emergency in 7 prefectures, accompanied by request for citizens to refrain from going outside unnecessarily, and restriction on usage of school campuses
2020/4/16	State of emergency expanded nationwide
2020/4/24	Temporary closure in 95% of elementary and junior high schools
2020/5/1	23 prefectures and cities designated by govt. ordinance to extend school closure until the end of May
2020/5/4	State of emergency extended until the end of May
2020/5/7	Majority of local governments decided extension of school closure
2020/5/13	88% of elementary and junior high schools continued closure after holidays
2020/5/14	State of emergency lifted in 39 prefectures
2020/5/21	State of emergency lifted in Osaka, Hyogo, and Kyoto prefecture
2020/5/25	State of emergency lifted in the remaining 5 prefectures
2020/5/25	Schools in the Greater Tokyo Area decided to reopen in June
2020/7/15	Tokyo Metropolitan Government raised the alert level to highest
2020/8/17	Real GDP for April-June period declined by 27.8% (on an annualized basis), worst ever after the Second World War
2020/8/28	(then) Prime Minister Abe announced resignation
2020/8/28	MEXT announced the result of a survey on online education in schools
2020/9/10	Tokyo Metropolitan Government lowered the alert level
2020/9/16	Suga, President of the Liberal Democratic Party, appointed as Prime Minister
2020/9/25	Government decided to expand the <i>Go To Travel</i> campaign from October
2020/9/29	MEXT announced the budget request plan for the next fiscal year (4,301 billion yen)
2020/10/13	Nippon Keidanren (Japan Business Federation) announced policy recommendations, including expansion of online education
2020/10/26	Prime Minister Suga announced in his general policy speech to balance infection control and economic activity
2020/11/6	The closing price of Nikkei Stock Average reached the highest level in 29 years
2020/11/16	Preliminary estimates of GDP for July-September period increased by 21.4% (on an annualized basis)
2020/11/19	Tokyo Metropolitan Government raised the alert level to highest

(continued)



**Table 5.1** (continued)

Date	Topic/Event
2020/12/17	The limit of students per class in elementary schools to be decreased to 35
2020/12/28	<i>Go To Travel</i> campaign suspended nationwide
2021/1/7	Declaration of state of emergency in the Greater Tokyo Area
2021/1/13	State of emergency expanded to 7 additional prefectures

enrollment rate is about 98% and the dropout rate is less than 2%. While selection upon entry (typically in the form of exams) is required in public senior high schools, only a few of these schools are highly competitive.

While there exist national, public, and private schools in Japan, only 0.6% of students are in national elementary schools, and 1.3% in private elementary schools, as of 2020 (MEXT, 2020b). In other words, Japan's education system is predominantly characterized by public schools. Likewise, only 0.9% of students are in national junior high schools, and 7.5% in private schools (although this figure is much higher in Tokyo with 25.2% being students in private junior high schools) (MEXT, 2020b). In contrast, the proportion of students in private schools is larger at the level of senior high schools (32.9%), whereas only 0.3% of students are enrolled in their national counterparts (MEXT, 2020b). In Tokyo, the ratio is even higher, with 56.4% of students in private senior high schools (MEXT, 2020b).

It is important to note the heterogeneity even among public schools. In addition to elementary and junior high schools, which have existed since the inception of the modern schooling system, different types of schools were allowed to be established, which are compulsory education schools and secondary schools. A compulsory education school is one integrating an elementary and junior high school, whereas a secondary school is the combination of a junior and senior high school. The latter requires exams upon entry even at the level of junior high schools, unlike traditional counterparts. Lastly, special-needs education schools were set up for children with disabilities, covering elementary through high school.

Similar to the US, Japan's education system is decentralized across three layers of administrative divisions: (i) national, (ii) prefectural, and (iii) municipal, respectively. As described later, different layers of local governments are in charge of different types of schools. For example, it is local municipalities that open and maintain public elementary and junior high schools. Remarkably, however, teacher salary is paid by prefectural and national governments (the former covering two-thirds, while the latter one-third). In this way, it is possible for teachers to receive similar salaries, despite fluctuations in the size of funding among different local municipalities.

### 5.3.2 *Disparity in Home-Based Learning During School Closure by School Type*

As mentioned above, different school types exist within the system of education. Accordingly, the proportion of schools providing online education differs by category of the school types. As shown in Table 5.2, among public elementary and junior high schools, only 5% of the schools helped students with their home learning through interactive online lectures in April (the beginning of the temporary closure). By June (the end of the closure), as Table 5.3 illustrates, the number increased to 8% of elementary schools and 10% of junior high schools, which nonetheless indicates the implementation was rather stagnant. In contrast, a higher proportion of schools of the other types offered online lectures. According to Table 5.3, 17% of compulsory education schools, 47% of senior high schools, even 70% of secondary schools, and 40% of special-needs education schools did so.

The discrepancy by school type, and particularly the tendency where secondary schools were more successful in providing online instruction, are visible in other items listed in Table 5.3, such as the utilization of TV programs, or of other digital learning materials. For example, while only about 35% of elementary and junior high schools used TV programs, 50% of secondary schools did so.

We argue that this gap by school type might be linked to education governance structure, particularly, the issue of who established the school. As mentioned earlier, the administrative divisions of Japan consist of two layers: the level of prefectures and of municipalities. Each administrative division organizes its own local government,

**Table 5.2** MEXT's survey result on educational instruction in public schools during the temporary school closure (as of April 16, 2020)

Type of instructions	Number of school founders
Home-based learning (HBL) utilizing textbooks and teaching materials in hard copy	1213 (100%)
HBL utilizing TV programs	288 (24%)
HBL utilizing lecture videos created by Board of Education (BoE)	118 (10%)
HBL utilizing digital textbooks and other digital learning materials	353 (29%)
HBL via interactive online lecture	60 (5%)
Other	145 (12%)

Source MEXT (2020c)

*Note* This question allowed respondents to choose multiple items. School founders are typically local municipalities, or prefectural governments. The total number of school founders is 1,213. Percentage in parentheses represents the proportion of school founders using a given type of instruction among the total number of school founders

**Table 5.3** MEXT's survey result on educational instruction for HBL by school type after the school closure (as of June 23, 2020)

Types of instruction	School type					
	Elementary school	Junior high school	Compulsory education school	Senior high school	Secondary school	Special-needs Ed. school
Use hard copies of textbooks and teaching materials	1715 (100%)	1742 (100%)	87 (100%)	153 (99%)	20 (100%)	105 (95%)
Use TV programs	608 (35%)	586 (34%)	41 (47%)	48 (31%)	10 (50%)	39 (35%)
Use lecture videos created by BoE	385 (22%)	407 (23%)	34 (39%)	46 (30%)	10 (50%)	47 (43%)
Other digital learning materials	591 (34%)	627 (36%)	46 (53%)	79 (51%)	15 (75%)	47 (43%)
Interactive online lecture	138 (8%)	173 (10%)	15 (17%)	72 (47%)	14 (70%)	44 (40%)
Safe exercise at home	1076 (63%)	1047 (60%)	58 (67%)	84 (55%)	15 (75%)	78 (71%)
Other	30 (2%)	22 (1%)	2 (2%)	2 (1%)	0 (0%)	11 (10%)

Source MEXT (2020d)

Note This question allowed respondents to choose multiple items. The numbers in the cells denote that of school founders as in Table 5.2. The percentage in parentheses represents the proportion of school founders using a given type of instruction among the same type of school founders

although that of a municipality is usually smaller than that of a prefecture. According to the School Education Law, every school has to be established either by the national, or local government (of prefectures or of municipalities), or school organizations (usually in the case of private schools). School type differs based on who serves as a school founder. In the case of public elementary and junior high schools, it is local municipalities that establish schools, and therefore manage school funding.

In the case of secondary schools, on the other hand, it is often a prefectural government that founds schools. These secondary schools, with greater funding, compete with private schools and strive to proactively promote digitalization of education to serve as a model school in their respective region. Likewise, most compulsory education schools might have better ICT facilities for a different reason. They were often established through a merger of existing elementary and junior high schools. Concomitant with the merger, they rebuilt the facilities such as school buildings and renovated their ICT environments.

In addition to the issue of school founders, we believe that parents' socioeconomic status (SES) might be another key factor in the disparity among different types of schools. While secondary schools are public, they require entrance exams unlike other public junior high schools. As is often the case with selective schools, households sending their children to secondary schools tend to have higher socio-economic backgrounds. Arguably, children in those households might have better access to ICT devices and the Internet.

Differences in parent SES can also play a key role in explaining the gap between public and private schools in general. While there is not enough data on private schools readily available, many 6-year private secondary schools are in urban areas, and those schools tend to compete with public secondary schools for student recruitment. This suggests that the level of education (including ICT facilities) should be equivalent or higher than that in public secondary schools. Furthermore, while the number of private elementary schools are small in Japan, students with a relatively wealthy family background enroll in those schools. Capitalizing on the higher tuition, those schools are able to set up facilities for online education.

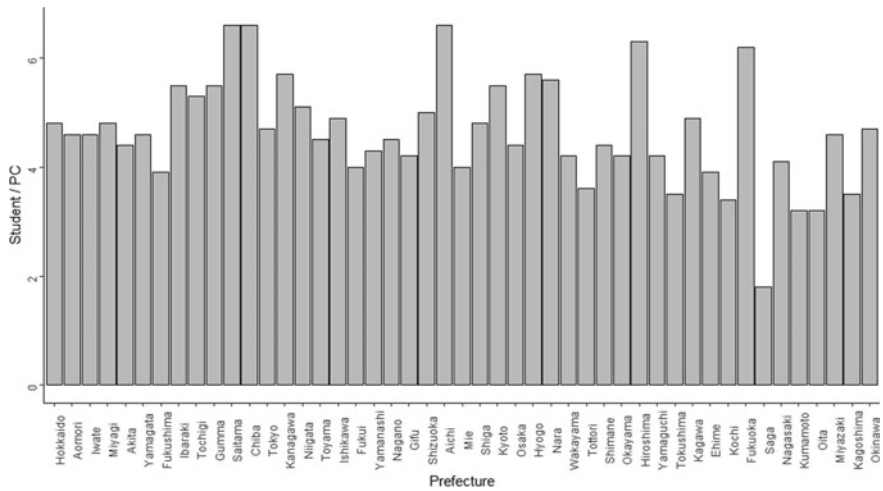
In contrast, public elementary and junior high schools are struggling with the lack of technology and devices necessary for online education, not just in schools but also in student households. If such disparity exists within the same class or school, most public schools adjust the level and method of education to a student of the lowest SES status to ensure equality. Hence, in these schools, economic and social challenges present in some families can directly influence a delay in education for the entire school, which eventually amplifies the disparity among different types of schools.

### ***5.3.3 Disparity in Home-Based Learning During School Closure by Prefecture***

In addition to the gap by school type, there exists a regional disparity in student learning during the pandemic. In this section, we illuminate the learning gap at the level of prefectures, drawing on two surveys conducted by the Cabinet Office, and MEXT, respectively.

Even before the launch of the GIGA School project, local governments were installing ICT devices and high-speed network in public schools, funded through local taxes, as well as tax allocations from the central government. The allocated tax from the central government was designed and calculated to help local governments in digitalizing their education. However, since the central government did not have any legally binding power as to how local governments would spend the allocated money, not all local governments used it for the intended purpose. In other words, the discrepancy related to ICT environments already existed before the Coronavirus outbreak.

Figure 5.1 presents the ratio of the number of laptops per student in each prefecture. As is visible in the figure, the ratio differs remarkably by prefecture. In Saga



**Fig. 5.1** The number of PCs per student in public schools by prefecture (as of March 1, 2020) *Source* MEXT (2020a). *Note* The vertical axis denotes the ratio of the number of PCs per student in public schools. Smaller number indicate more devices are available for the given number of students

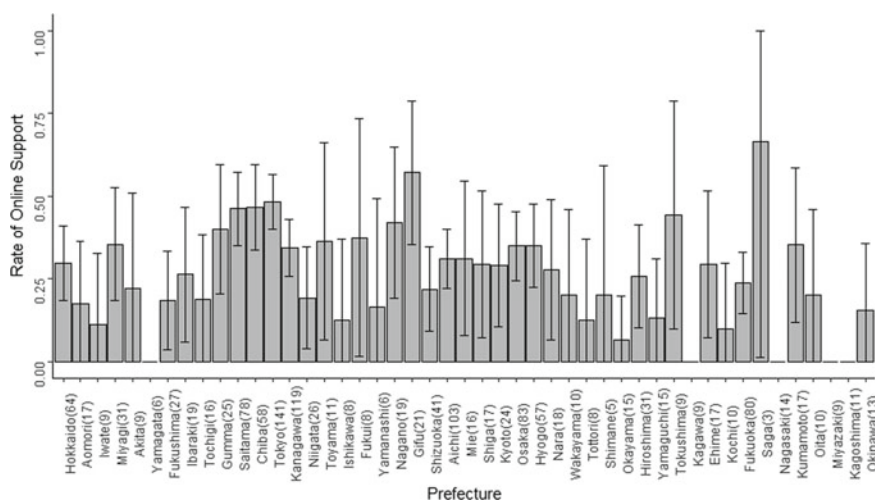
Prefecture, for example, the ratio is less than two, showing that more ICT devices have been distributed to students in Saga Prefecture than in other prefectures. While Saga Prefecture serves as an exemplary case at the prefectural level, Shibuya Ward (Tokyo) and Tsukuba City (Ibaraki Prefecture) are model cases at the municipal level.<sup>2</sup> Shibuya Ward even offered support for home-based Internet access for student learning.

Given the difference in ICT environments shown above, the school closure should have had differing impacts on students, depending on the prefectures where they lived. To examine this disparity, we drew on a survey that the Cabinet Office conducted during May and June 2020, which coincided with the school closure. The Cabinet Office intended to capture the change in people's ways of thinking and behavior in daily life due to the COVID-19 pandemic (Cabinet Office, 2020). The survey carried out online targeted 10,128 registered people over the age of 15 (Cabinet Office, 2020). We used a question on what kind of instructions respondents' youngest children received during the pandemic.<sup>3</sup> Figure 5.2 shows the proportion of children receiving some forms of online education by prefecture.

Among all the prefectures, on average, 10.2% of students received online education during the school closure. Notably, as shown in Fig. 5.2, the number in Saga Prefecture is much higher (66.7%) than the average, although the sample size is rather small. Another limitation to this survey is that it did not distinguish public and private schools. Hence, we cannot really compare this survey with that by the MEXT, because the latter explored only public schools.

<sup>2</sup> Consult the Sect. 5.1 to see the number of schools in these school districts.

<sup>3</sup> See Appendix A for more details on questions used for this analysis.



**Fig. 5.2** Proportion of Respondents' Children Receiving Some Forms of Online Education During the School Closure (n = 1,363) *Source* Cabinet Office (2020). *Note* Some forms of online education denotes either online education from teachers, online tutorials, and feedback (including emails), or online learning materials received from schools for home-based learning. The total number of prefectures is 47, and the figure in parentheses beside the name of a given prefecture represents the number of respondents in the prefecture. Error bars indicate the 95% confidence intervals

While another survey needs to be done to directly reveal the relationship between the ICT facilities (particularly, the ratio of laptops per student) and implementation of online learning, it is highly probable that the level of ICT environments by prefecture leads to the regional disparity in student home-based learning (HBL). Differences in digital investment in schools, such as one device per student and high-speed Internet, seems to indeed be a common factor in explaining the gap by school type or by prefecture. In the following section, we highlight the MEXT's initiative to potentially close the student learning gap.

### 5.3.4 The GIGA School Initiative as the Policy Solution

As mentioned in the first section, the national government, in response to the pandemic, decided to advance the GIGA School Initiative ahead of its original schedule. By the end of March 2021, all elementary and junior high schools will allocate one device per student and install high-speed networks. Using a subsidy from the national government, each local government will be in charge of implementing this project on the ground. Furthermore, local municipalities will take additional measures, such as lending mobile Wi-Fi devices to households without Internet. As mentioned thus far, the discrepancy in school funding is linked to the issue of school

founders with less financial resources. By means of the national government's financial assistance, this initiative is likely to narrow such a gulf existing among different kinds of schools and among prefectures.

The GIGA initiative places its primary emphasis on the hardware of online education. In terms of educational content, we would like to underscore that abundant resources are available in Japan and draw particular attention to programs by the Japan Broadcasting Corporation (*Nippon Hōsō Kyōkai*, in Japanese; hereinafter, NHK). Since 1959, the NHK began a free channel dedicated solely to education, and have created quality educational programs, some of which covered school curriculum. Taking advantage of its experience and capacity to develop educational content, the corporation started the *NHK for School* in 2011. This platform provides various online educational contents, and more importantly, is compliant with the Curriculum Guidelines (i.e., the national curriculum). From 2015, the *NHK for School* began to provide programs helping students learn through the medium of tablet devices. If ICT environments were in place, students would have been able to enjoy the benefit of these NHK programs, even during the sudden school closure.

Certainly, there is concern over whether students can learn by relying on online education. In fact, a research team led by Professor Jun Nakahara of Rikkyo University investigated student learning during the school closure in May and revealed 62% of the students (out of 760) did not know what to do during the school closure (Takasaki et al., 2020). Acknowledging the lack of student agency, however, the MEXT has made revisions to the Curriculum Guideline in 2017 to place a greater emphasis on this aspect of student knowledges, skills, and attitudes (Shirai, 2020). While the implementation of the new Curriculum Guideline is still underway, once school education becomes fully aligned, students exercising their agency will be able to tap into the rich educational resources available to them in these newly installed ICT environments.

### ***5.3.5 MEXT's Additional Supportive Policy Measures***

Besides the GIGA School initiative, the MEXT has been implementing various supportive measures, which this section will overview below. As shown in Table 5.4, the MEXT's responses to COVID-19 can be grouped into 3 categories: (i) support for students facing economic hardships, (ii) assistance with children's learning, and (iii) disbursement of ICT devices and relevant services. Detailed explanation on each policy item will not be covered in our analysis, however, we will highlight the fact that the MEXT promptly executed necessary measures under rapidly changing circumstances. In Appendix B, we include the list of the MEXT's initiatives for readers' reference.

**Table 5.4** MEXT's various supportive measures

Type of support	Items
Supporting students facing economic difficulties	“Emergency Student Support”: cash handout program for students to continue studying
	Financial assistance from Japan Student Services Organization (JASSO)
	Expansion of tuition reduction/exemption
Assisting with children's learning	Staffing schools via the School/Child Supporter Human Resources Bank
	Support for schools: Covering expense for school principals to combat infection and implement effective learning
	Reconsideration of curriculum: resolving the delay in the curriculum
	(i) designating school attendance days
	(ii) staggered attendance
(iii) flexible timetables	
(iv) shortening the summer break	
(v) Open classes on Saturdays	
Promoting ICT devices	Reconsideration of curriculum: devise measures in case not everything in the curriculum can be covered
	(i) carrying over some of the content to next year and beyond
	(ii) splitting learning activities between home and schools to reduce those in schools
	“One device per student”: acceleration of the GIGA School Initiative
	Covering communication expenses enabling HBL of students in low-income households
Launching a website to support children's effective learning	
Satellite broadcasting of contents from the Open University of Japan	

## 5.4 Threat to Learning Opportunities and Room for Optimism Amidst the Pandemic

The previous section analyzed the disparity stemming from differences in education governance structure. The pandemic indeed exacerbated the pre-existing disparities, not just at the municipal level, but also in various social groups, particularly the vulnerable population. Various studies reported detrimental effects of the COVID-19 crisis on households with lower socioeconomic status (García & Weiss, 2020; Yarrow, Masood, & Afkar, 2020). In the first half of this section, we draw particular attention to single-parent households. During the school closure, when parents were absent at home, children had to face home learning without parental support. Additionally, if single parents lost their jobs due to the worsening economic situation, financial shortages deprived children of ICT tools that provide access to online education. Children in single-parent households, therefore, faced an even greater threat to their learning.



In the latter half of this section, however, we portray different sides of the COVID-19 Pandemic. In response to the school closure, the policy initiative to distribute personal ICT devices was accelerated, as mentioned above. In addition to this development, we will sketch a few silver linings of this crisis, and how they have the potential to ameliorate the current disparity of access to education among students.

#### ***5.4.1 Deprivation of Learning Opportunities from Children in Single-Parent Households***

The Japan Institute for Labor Policy and Training (JILPT) led a survey to clarify the impact of the COVID-19 Pandemic, particularly on single-parent households. The survey highlights the severe distress single-parent families faced amidst the crisis. While comparing 500 single parents with 500 non-single parents, 60.8% of single parents reported that they were struggling to make ends meet toward the end of the year, and 35.6% were unable to buy food (JILPT, 2020). In the case of non-single parents, the figures were much lower (47.6% and 26.4%, respectively), indicating that single parents were in dire straits (JILPT, 2020).

Other surveys call attention to how financial hardship hampered learning opportunities for children in single-parent households. A survey conducted by Save the Children, Japan, revealed 32% of single-parent families in Tokyo answered that their children “may drop out of high schools” due to financial reasons (Save the Children Japan, 2020). Surprisingly, another survey led by an NPO, Single-Mother Forum, and researchers revealed about 40% of households with children in junior high school or older had no computers or tablets available at home (Single Mothers Survey Project Team, 2020). In addition, about 30% of households did not have access to the Internet at home or had to limit data usage (Single Mothers Survey Project Team, 2020). This result matches those from a survey by Aomori Prefecture, in which 36.8% of single-parent households (95.4% are single mothers) answered that the environment for online classes at home was “not good or not at all [good]” (Future of Children Division, Aomori Prefecture, 2020). These households would not have been able to benefit from online education even if it had been implemented during the school closure.

#### ***5.4.2 Ray of Hope for Education Amidst the COVID-19 Pandemic***

The above snapshot of single-parent households implies detrimental effects of the pandemic on social groups with low SES. This aspect cannot be emphasized enough and requires us to monitor future interventions. However, it cannot be overlooked

either that this crisis opened a path toward improvement of schools and education systems, and even reduction of the learning disparities described above. Most importantly, the crisis accelerated the GIGA School Initiative policy initiative, as mentioned earlier. By providing every student with one laptop or tablet, this initiative is expected to close the gap in student access to online education. Local municipalities also offer students mobile Wi-Fi tools, which could be of great help to those who have no internet equipment at home. This section aims to highlight three additional silver linings in this pandemic. Those include the transformation of teacher professional culture, personalized learning through online education, and enhanced communications between parents and children.

Teachers in Japan are well known for their high degree of professional identities (Akita & Lewis, 2008). This pride as an educational professional does not necessarily translate into the usage of ICT devices. According to TALIS in 2018, only 18% of teachers answered that they use ICT “frequently” or “always” at the junior high school level (OECD, 2020a). In some cases, it is even possible that this very professional identity can inhibit teachers from relying on digital materials. Some teachers view other teachings utilizing online materials made by others as a lack of effort, and these teachers might try to create their own materials. Indeed, during the school closure, as indicated by the MEXT survey, far less than half of the teachers used TV programs (despite readily available content, such as *NHK for School*) or lecture videos provided by the Board of Education (MEXT, 2020c). However, compared to the figure in TALIS (18%), 36% of junior high school teachers reported using digital learning materials during the closure. According to another survey of teachers in public elementary and junior high schools conducted after the school closure (Benesse Educational Research and Development Institute, 2021), even higher proportions of teachers implemented ICT devices in classes after schools were reopened: 63.3% in elementary schools and 58.9% in junior high schools (pp. 16–17). As the GIGA school initiative is further promoted, and ICT environments are set up, teachers will be able to fully tap into the opportunity to rely on diverse resources. By enhancing this new practice, we argue, it could gradually transform the teacher culture in Japan.

Second, this crisis enabled Japan’s education system to provide more personalized learning via online education. Japan has one of the highest number of children and students per class among OECD countries. According to the OECD’s Education at a Glance (OECD, 2020b), in 2018 the number of students per class in Japan was 27.2 compared to the OECD average of 21.1 in elementary schools. In the case of junior high school, that number was 32.1 compared to the OECD average of 23.3. The implementation of online classes and tutoring during the school closure allowed students to ask teachers questions “in person,” and allowed teachers to give each student more individualized attention.

Lastly, it is also important to highlight positive changes in the relationship between children and parents. According to a survey conducted by the Cabinet Office, 70.3% of married couples answered that time spent with family increased during the pandemic (Cabinet Office, 2020). For those who experienced work from home, as high as 77.7% reported that time spent with family increased (Cabinet Office, 2020). As shown in an online survey conducted by the National Center for Child Health and

Development, about 75% of children in the lower grades of elementary school (grade 1–3) needed parents' help in home learning, and 60% of those in the upper grades of elementary school (grade 4–6) needed parental help as well (National Center for Child Health & Development, 2020). Hence, the increased time that parents spent with their children, particularly for younger students, and their increased capacity to assist their children, could improve learning at home.

## 5.5 Conclusion: Implications for Future Education and Policy

In this chapter, we describe the trajectory of the COVID-19 pandemic in Japan and illustrate government and school responses. Despite the uncertainty and anxiety posed by the outbreak, the MEXT promptly announced policy initiatives and took various supportive measures, most notably, the initiative to distribute personal ICT devices to students. Schools, amidst the crisis, also took full responsibility for their daily operations and strove to ensure student learning opportunities. Undoubtedly, the crisis had persisting negative impacts on everyday learning, and exacerbated pre-existing disparities among vulnerable populations, as well as among local governments. Aware of the enormity of the damage caused by this historic event, however, we cannot stop offering, developing, or reimagining education.

As a concluding remark, we put forth key takeaways and postulate a way forward out of the crisis. The first step is to reconsider the purpose of schools. Traditionally, schools have served as the place for developing academic skills. The experiences of the pandemic, however, highlight the need to understand the importance of schools as the place for students' mental growth, mental care, and mutual support through communication and collaboration with friends and peers. Around 90% of teachers reported that after the coronavirus outbreak, they came to see schools as a site for learning with peers and socializing with others (Benesse Educational Research and Development Institute, 2021). In fact, the National Center for Child Health and Development has disclosed a survey result which shows that roughly 30% of high school students reported symptoms of moderate depression during the pandemic (National Center for Child Health & Development, 2021). In this context, it would be imperative to rethink what the purposes and roles that schools play in education and learning. In doing so, it is necessary to involve not only the community of educational professionals, but also a more diverse groups of stakeholders, such as parents, businesspeople, and the general public.

The next step is to reimagine forms, scales, and ways of cooperation among schools and education systems. Given the policy initiatives allowing greater access to online education, students can now learn in a variety of ways, in diverse locations, and with different peers, rather than just continuously commuting to the same schools. The popularity of *N High School* symbolizes this shift in education and people's mindset. N High School is a correspondence high school that just opened in

the spring of 2016. It has rapidly increased the number of entrants, reaching 20,000, and its popularity has skyrocketed as it produced successful results related to university entrance. However, a closer look at this school reveals the popularity mainly stems from the on-campus courses and programs, such as agricultural and fishing experiences at the N Center (a local experiential learning center). In other words, it is not sufficient to just emphasize the importance of online education. Rather, we need to shift our focus onto the emergence of a new mode of learning that blends physical (in-classroom) instruction and online education.

The recently revised Curriculum Guidelines (i.e., the national curriculum) in fact resonates with this new form of education. It is characterized by active learning and inquiry-based learning. Students can exercise these different types of learning through online education at home, as well as real field experiences or site-based inquiry (including intensive courses at camps). In doing so, students can freely choose where, when, with whom (not just teachers, but practitioners; students of different grades, ages, and from other regions), and what and how to learn. This means that under these circumstances we can enhance more personalized learning. As stated by Yoshimasa Hayashi, former Minister of Education, Culture, Sports, Science and Technology, it is imperative to transform the focus of education policy from formal egalitarianism to fair individually optimized learning in public education (MEXT, 2018).

In this new setting, networks of schools can play a significant role and eventually change the power dynamics of schools. In Japan, the rapid decline in birthrate has led to the closure and merger of high schools and reduction of universities in rural areas. By capitalizing on online education, however, those high schools in remote areas, which would have to downsize or go under, could remain centers of learning. If multiple centers are networked across regions, it will be possible to secure a certain number of students and teachers, while offering a variety of programs in different locations and potentially attract more students from wider areas. Field experiences or experiential learning offered in these networks could serve as a hallmark that even schools in urban areas might envy.

In order to achieve this goal, the current standards for establishing schools will have to be reconsidered from all perspectives. At the same time, it is crucial to plan how to evaluate and guarantee the quality of these new educational programs and of the governance of educational institutions supplying those programs. Additionally, we need to rethink ways in which the government is involved in education (such as licensure, certification, supervision, and disbursement of subsidies) for schools and students to exercise more agency.

Aside from policy initiatives to amend the problems mentioned above, the importance of capturing the impacts of the pandemic on students in more detail cannot be overlooked. As reviewed in this chapter, there are attempts to document what kind of education is available for students. Yet, we still need to directly measure how this crisis has influenced student academic performance. The MEXT will conduct a nationwide survey in May 2021. The result of this survey is expected to help us analyze the effects of the pandemic even more thoroughly.

COVID-19 presents unprecedented challenges to us. Whether we can take them as opportunities to reform education depends on how we will fight back. If we never stop developing our ingenuity and keep learning via trial and error, we believe this pandemic will indeed lead to groundbreaking innovations that can add a new page to the history of education in Japan and around the world.

## Appendix A: List of Questions from the Survey by the Cabinet Office

Here we present the list of questions and answer choices which we used for the analysis in Fig. 5.2.

Q1-1: Prefecture of your residence

Q25: Please tell us about your youngest child (in elementary school or above).

Mark all types of instructions your child has experienced during the COVID-19 pandemic.

- (1) Online education from a teacher
- (2) Online tutorials and feedbacks (including emails etc.), from a teacher
- (3) Online learning materials provided from school for home-based learning
- (4) Online education outside school, such as cram schools/private tutoring
- (5) Online tutorials and feedbacks (including emails etc.), from cram schools/private tutoring
- (6) Online learning materials provided from cram schools/private tutoring
- (7) Other kinds of online education
- (8) Did not receive any online education
- (9) Not sure
- (10) Have no child in elementary school or older

*Source* Cabinet Office (2020).

## Appendix B: Overview of MEXT's Policy Initiatives

Date	Title/Website	Overview
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Date	Title/Website	Overview
2020/2/28	Notification regarding the COVID-19 response - temporary closure for elementary, junior, senior high, and special-needs education schools <sup>4</sup>	<ul style="list-style-type: none"> <li>● “The health and safety of the children comes first and foremost”</li> <li>● Temporary closure based on Article 20 of the School Health and Safety Act (Act No. 56 of 1958)</li> <li>● Recommendations for home study, etc</li> <li>● In the event that the number of class hours falls below the standard number of class hours as specified in the Enforcement Regulations of the School Education Law due to a temporary closure, that fact alone shall not be considered a violation of the Enforcement Regulations of the School Education Law</li> </ul>
2020/3/2	Launched website supporting children’s learning <sup>5</sup>	<p>Learning support contents portal site</p> <ul style="list-style-type: none"> <li>● Links to content supporting children’s learning</li> <li>● “Exciting Science” Links</li> <li>● Learning support contents for each subject</li> </ul>
2020/4/21	Request for retired teachers as human resources to support schools in coping with the COVID-19 outbreak <sup>6</sup>	<ul style="list-style-type: none"> <li>● MEXT will support the assignment of additional teachers and learning instructors to supplement classes and supplementary lessons that are not positioned in the curriculum for the 2020 academic year</li> <li>● Encourage the use of retired teachers</li> <li>● Relax qualification requirements as necessary to secure a wider range of human resources</li> </ul>

(continued)

<sup>4</sup> MEXT. (2020). *Shingata koronavirusu kansenshō taisaku no tame no shōgakkō, chūgakkō, kōtōgakkō oyobi tokubetsu shien gakkō nado ni okeru issei rinji kyūgyō ni tsuite (tsūchi)* [On temporary closure for elementary, junior, senior high, and special-needs education schools as response to COVID-19 (notification)]. [https://www.mext.go.jp/content/202002228-mxt\\_kouhou01-000004520\\_1.pdf](https://www.mext.go.jp/content/202002228-mxt_kouhou01-000004520_1.pdf).

<sup>5</sup> MEXT. (n.d.). *Kodomo no manabi ōen site -gakushū shien contents portal site* [Children’s learning support website - Learning support contents portal website]. [https://www.mext.go.jp/a\\_menu/iku sei/gakusyushien/index\\_00001.htm](https://www.mext.go.jp/a_menu/iku sei/gakusyushien/index_00001.htm).

<sup>6</sup> MEXT. (2020). *Shingata koronavirusu kansenshō taisaku ni kakaru gakkō wo support suru jinzai kakuho ni okeru taishoku kyōin no katsuyō ni tsuite (irai)* [Utilization of retired teachers in securing human resources to support schools in countermeasures against new coronavirus infection (Request)]. [https://www.mext.go.jp/content/20200421-mxt\\_kouhou01-000004520\\_3.pdf](https://www.mext.go.jp/content/20200421-mxt_kouhou01-000004520_3.pdf)

(continued)

Date	Title/Website	Overview
2020/4/21	Notification to ensure learning during temporary closure of elementary, junior, and senior high schools <sup>7</sup>	<ul style="list-style-type: none"> <li>● Based on the fact that there were large differences among local governments in terms of support for learning and confirmation of the physical and mental condition of individual students, the MEXT has issued a notice on the minimum measures that should be taken even during temporary closure</li> <li>● Compulsory education is to guarantee the right to education as stipulated in Article 26 of the Constitution</li> <li>● Improvement of home study required by schools</li> <li>● If textbooks are not available, they should be sent by mail</li> <li>● Study guidance and study counseling using ICT, telephone, etc</li> </ul>
2020/4/24	Established a human resources bank for school and child supporters <sup>8</sup>	<ul style="list-style-type: none"> <li>● After the reopening of schools, there will be many opportunities to need human resources to support schools in each region, so that boards of education, etc. will be able to find the necessary human resources immediately</li> </ul>

(continued)

<sup>7</sup> MEXT. (2020). *Shingata koronauirusu kansenshō taisaku no tame ni shōgakkō, chūgakkō, kōtōgakkō nado ni oite rinji kyūgyō wo okonau baai no gakushū no hoshō nado ni tsuite (tsūchi)* [Guarantee of learning when elementary schools, junior high schools, high schools, etc. are closed temporarily for countermeasures against new coronavirus infection (Notification)].  
[https://www.mext.go.jp/content/20200421-mxt\\_kouhou01-000004520\\_6.pdf](https://www.mext.go.jp/content/20200421-mxt_kouhou01-000004520_6.pdf)

<sup>8</sup> MEXT. (2020). *Gakkō koyō share link / gakkō kodomo ōen supporter jinzai bank ni tsuite* [About school employment share link / the human resource bank for school and child supporters].  
[https://www.mext.go.jp/a\\_menu/coronavirus/mext\\_00012.html](https://www.mext.go.jp/a_menu/coronavirus/mext_00012.html)

(continued)

Date	Title/Website	Overview
2020/4/27	Proactive use of ICT for learning at home and continuing schoolwork in response to the declaration of a state of emergency due to the COVID-19 <sup>9</sup>	<ul style="list-style-type: none"> <li>● Using ICT to ensure children's learning machines</li> <li>● Requests for a flexible response from the field to maximize the use of ICT environments in municipalities and households without being bound by the rules of normal times</li> <li>● Obtain understanding from families so that ICT terminals at home can be used for students' home learning</li> <li>● Each school should be aware of the communication environment at home</li> <li>● If it is possible for students to take home and use the terminals that have already been installed at school, they should actively use them without being bound by the normal rules</li> </ul>
2020/4/30	Financial support for students affected by COVID-19 <sup>10</sup>	<ul style="list-style-type: none"> <li>● List of scholarships and study support systems, etc</li> <li>● New systems for higher education study support and loan scholarships</li> <li>● Study supports unique to each university and other related support systems</li> <li>● New system for higher education study support</li> <li>● Support for students whose family finances have suddenly changed, etc</li> </ul>

(continued)

<sup>9</sup> MEXT. (2020). *Shingata koronauirusu ni yoru kinkyūjitai sengen wo uketa katei deno gakushū ya kōmu keizoku no tame no ICT no sekkyokuteki katsuyō ni tsuite* [Proactive use of ICT for learning at home and continuing schoolwork in response to the Declaration of a Ddate of Emergency due to the new coronavirus].

[https://www.mext.go.jp/content/20200427-mxt\\_kouhou01-000004520\\_1.pdf](https://www.mext.go.jp/content/20200427-mxt_kouhou01-000004520_1.pdf)

<sup>10</sup> MEXT. (2020). *Shingata koronauirusu kansenshō ni kakaru eikyō wo uketa gakuseitō ni taisuru keizaiteki shien nado ni tsuite* [Financial support for students affected by the new coronavirus infection].

[https://www.mext.go.jp/content/20200501-mxt\\_kouhou01-000004520\\_4.pdf](https://www.mext.go.jp/content/20200501-mxt_kouhou01-000004520_4.pdf)



(continued)

Date	Title/Website	Overview
2020/5/14	Notification regarding the direction of “security of learning” in the implementation of school education activities amidst the COVID-19 <sup>11</sup>	<ul style="list-style-type: none"> <li>● It is important for schools, families, and communities to work together and take all possible measures to ensure that no child is left behind and that learning is maximized</li> <li>● In order to be able to respond flexibly, it is necessary to make preparations, including the development of the ICT environment</li> <li>● Flexibly review the “how to learn” (instructional methods) stipulated in the Courses of Study</li> <li>● Policy to allow the transfer of study guidance from one year to the next, and plans to take institutional measures for this purpose</li> </ul>
2020/5/27	MEXT Emergency Measures Package (Vol.2) <sup>12</sup>	<ul style="list-style-type: none"> <li>● Support for students and others who are having trouble making ends meet</li> <li>● Guarantee of learning for children</li> <li>● Support for university hospitals and research sites</li> </ul>
2020/5/29	Emergency measures for students who have been financially affected by the COVID-19- Emergency package to “support students’ learning” <sup>13</sup>	<ul style="list-style-type: none"> <li>● Emergency Student Assistance Benefit” for “Continuing Education</li> <li>● Creation of special emergency interest-free loan scholarships</li> <li>● Emergency tuition fee reduction and exemption</li> <li>● Enhancement of the deferment system for repayment</li> <li>● Emergency donation for countermeasures against new coronary infections (call for donations to the Japan Student Services Organization)</li> </ul>

(continued)

<sup>11</sup> MEXT. (2020). *Shingata koronavirusu kansenshō no eikyō wo fumaeta gakkō kyōiku katsudō nado no jisshi ni okeru “manabi no hoshō” no hōkōsei nado ni tsuite (tsūchi)* [Direction of “Guarantee of learning” in the implementation of school educational activities, etc. in light of the influence of the new coronavirus infection (notification)]. [https://www.mext.go.jp/content/20200515-mxt\\_kouhou01-000004520\\_5.pdf](https://www.mext.go.jp/content/20200515-mxt_kouhou01-000004520_5.pdf)

<sup>12</sup> MEXT. (2020). *Mombukagakushō kinkū taisaku pakkēji (dai 2 dan)* [MEXT Emergency measures package (Vol. 2)]. [https://www.mext.go.jp/content/20200527-mxt\\_kouhou02-000006999\\_1.pdf](https://www.mext.go.jp/content/20200527-mxt_kouhou02-000006999_1.pdf)

<sup>13</sup> MEXT. (2020). *Shingata koronavirusu ni yori keizaiteki na eikyō wo uketeiru gakuseitō heno kinkū taiō sochi - gakusei no “manabi no shien” kinkū package* [Emergency measures for students who have been financially affected by the new coronavirus - Emergency package “to support students’ learning”]. [https://www.mext.go.jp/content/20200529-mxt\\_kouhou01-000004520\\_1.pdf](https://www.mext.go.jp/content/20200529-mxt_kouhou01-000004520_1.pdf)

(continued)

Date	Title/Website	Overview
2020/6/5	Notification regarding guideline for sustainable school management in response to COVID-19 and a package of comprehensive measures to “security of learning” of students <sup>14</sup>	<ul style="list-style-type: none"> <li>● In order to guarantee the right to education for students and others in a sustainable manner, it is necessary to continue school management</li> <li>● Students who are unable to attend school due to temporary closures, etc., will be required to study at home, and teachers will provide appropriate academic guidance and monitor their learning status</li> <li>● Priority will be given to 6th graders, 9th graders, and 12th graders who need guidance for their future career</li> <li>● Enhance instruction at school by increasing the number of class periods per day, devising a timetable, shortening long holidays, and utilizing Saturdays</li> <li>● Even if the number of class hours is lower than the standard number of class hours stipulated in the School Education Law Enforcement Regulations, it will not be considered a violation of the regulations</li> <li>● Make maximum use of all types of equipment and environments, without being bound by the rules for ICT use during normal times</li> <li>● Enforcement of the compensation system for public transmission for classroom purposes</li> </ul>

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<sup>14</sup> MEXT. (2020). *Shingata koronairusu kansenshō ni taiō shita jizokuteki na gakkō un-ei no tame no guideline oyobi shingata koronairusu kansenshō taisaku ni tomonau jidō seito no “manabi no hoshō” sōgō taisaku package ni tsuite (tsūchi)* [Guidelines for sustainable school management in response to new coronavirus infection and a package of comprehensive measures to “guarantee the learning” of students in response to new coronavirus infections (Notification)]. [https://www.mext.go.jp/content/20200605\\_mxt\\_kouhou02\\_000007000-1.pdf](https://www.mext.go.jp/content/20200605_mxt_kouhou02_000007000-1.pdf)

(continued)

Date	Title/Website	Overview
2020/8/13	Notification regarding public notice providing for special provisions of the Courses of Study for Elementary Schools, Junior High Schools, and Senior High Schools from FY2020 to FY2022, and for special provisions of the Courses of Study for Special-needs Schools <sup>15</sup>	<ul style="list-style-type: none"> <li>● Part of curriculum originally scheduled to be taught in 2020 (standard scholastic grade) and 2021, to be moved to 1 year ahead of grade 2021 or 2 years ahead of grade 2022</li> <li>● This is a special provision to allow restructuring of the curriculum into the next 1–2 academic years</li> <li>● Although the number of conducted class does not reach the target number of class in curriculum, this will not be considered as violation of Enforcement Regulations for the School Education law</li> <li>● Elastic certification process to be applied for the completion of each grade curriculum or graduation, so there will be no disadvantage for students to proceed to the next level of education</li> </ul>

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<sup>15</sup> MEXT. (2020). *2020 nendo kara reiwa 4 nendo made no aida ni okeru shōgakkō gakushū shidōyōryō, chūgakkō gakushū shidōyōryō oyobi kōtōgakkō gakushū shidōyōryō no tokurei wo sadameru kokuji narabini tokubetsu shien gakkō shōgakubu / chūgakubu gakushū shidōyōryō oyobi tokubetsu shien gakkō kōtōbu gakushū shidōyōryō no tokurei wo sadameru kokuji ni tsuite (tsūchi)* [Public notice providing for special provisions of the Curriculum of Study for Elementary Schools, Junior High Schools, and Senior High Schools from FY2020 to FY2022, and for special provisions of the Curriculum of Study for Elementary and Junior High Schools and Senior High Schools for Special Needs Schools (Notification)]. [https://www.mext.go.jp/content/20200813-mxt\\_kouhou01-000004520\\_1.pdf](https://www.mext.go.jp/content/20200813-mxt_kouhou01-000004520_1.pdf)

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**Kazuaki Iwabuchi** is a Ph.D. candidate at Teachers College, Columbia University, New York, NY, USA. His main research interest falls in education policy for internationalizing national education systems. His latest publication is: Iwabuchi, K., Komoto, A., & Shimizu, H. (2019). Tokkatsu Reform: Learning Better Together. In R. Tsuneyoshi, H. Sugita, K. Nozu-Kusanagi, & F. Takahashi (Eds.), *Tokkatsu: The Japanese Educational Model of Holistic Education* (pp. 197–206). Singapore: World Scientific Publishing.

**Kouki Hodama** is an official of the Ministry of Education, Culture, Sports, Science and Technology in Japan (2021). He graduated from the Graduate School of Public Policy (Master for Public Policy) in the University of Tokyo and started his current career. He participated in this project while being a student in the graduate school, under the supervision of Professor Suzuki.

**Yutaka Onishi** is a management consultant at a global consulting firm. He graduated from the Graduate School of Public Policy (Master for Public Policy) in the University of Tokyo, prior to which he obtained a bachelor's degree in education. He participated in this project while being a student in the graduate school, under the supervision of Professor Suzuki.

**Shota Miyazaki** is the Director of Government Affairs at Microsoft Japan. He was born in Kuwait, returned to Japan due to Iraqi Invasion in 1990. As a new grad hire in 2006, he served various positions within Microsoft, such as the team leader of SME sales, strategic business manager, partner alliance manager, and SMB public sector lead. Since 2016, Shota took the government affairs role and is currently leading multi projects in policy areas of workstyle innovation, regional revitalization, diversity and inclusion, digital skilling, healthcare, connected autonomous vehicle, education, and digital transformation of government. As a government affairs director, he is making policy recommendations by outreaching and collaborating with multi stakeholders in central and local governments, healthcare, academia, and industry organizations. He leveraged telework to balance both full time work and full time academic and graduated from the University of Tokyo - Graduate School of Public Policy in 2021. He holds a Masters degree in Public Policy.

**Sae Nakae** is an official of the Japanese Ministry of Education, Culture, Sports, Science and Technology. She has completed her secondary education in Paris with International Baccalaureate Diploma and graduated from Keio University with a Bachelor of Arts in Policy Management where she learnt from Kan Suzuki. She has experiences of working at NPOs to implement project-based learning to high schools in Japan. Her interests include educational sociology, social structures, and diversity education.

**Kan Hiroshi Suzuki** is Professor of the University of Tokyo and Keio University. He is an Advisor and a Bureau Member of OECD Education 2030. He is a former Japanese State Minister of Education, Culture Sports, Science and Technology (MEXT) and a Ministerial Aide to MEXT. At the said position, he was in charge for reform of the Japanese National Curriculum and introduction of active learning.

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# Chapter 6

## COVID-19 and Post-pandemic Educational Policies in Mexico. What is at Stake?



Sergio Cárdenas, Dulce Lomelí, and Ignacio Ruelas

**Abstract** The Latin American region is experiencing an educational crisis due to the COVID-19 pandemic since efforts to contain the outbreak will grow the deep educational and economic gaps characterizing this region. During the pandemic, Mexico's central intervention to continue instructional activities in the basic education system was implementing distance education based on educational television. As expected, this intervention raised different concerns on its effectiveness and how different student populations will be affected. This chapter has four main goals: (a) to describe and analyze educational gaps before the pandemic, identifying the central educational policies implemented in previous decades; (b) to describe and analyze educational policies implemented during the pandemic and how these may affect students at risk; (c) to conduct a prospective analysis to identify potential effects of the sanitary crisis in the administration of the education system in Mexico, and (d) to identify the main policy lessons resulting from the Mexican government initial response to the COVID-19 sanitary crisis.

### 6.1 Introduction

The Latin America and the Caribbean region is experiencing a humanitarian crisis considered a perfect storm. Most of the efforts to contain the COVID-19 outbreak will increase the deep educational and economic gaps characterizing this region, such as those recently described in the Regional Report of the Global Education Monitoring Report (UNESCO, 2020). Furthermore, educational achievements that took decades to accomplish, mainly surrounding enrollment rates and intergenerational education mobility, will have vanished in a couple of years (Lustig et al., 2020).

The COVID-19 pandemic will affect millions of students and their families for years. According to preliminary information about how this virus was transmitted, the required lockdown policies and the mandatory closure of nearly a quarter-million

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S. Cárdenas (✉) · D. Lomelí · I. Ruelas  
Centro de Investigación y Docencia Económicas, División de Administración Pública, Carretera México Toluca 3655, Lomas de Santa Fe, 01210 Ciudad de México, México  
e-mail: [sergio.cardenas@cide.edu](mailto:sergio.cardenas@cide.edu)

schools across this country beginning on March 23rd, 2020, was a rational response (Viner et al., 2020). However, due to the rapid transition to distance education, it was challenging to design effective interventions to support students, parents, and teachers during this period, resulting in an interruption of instructional activities for a significant part of this country's student population. This condition may explain why nearly 46.5% of surveyed primary school teachers reported that "it was difficult to guarantee a curriculum continuity" during this period (Juntos por el Aprendizaje, 2020).

During the pandemic, Mexico's central intervention to continue instructional activities in the basic education system has been implementing distance education based on educational television, implemented through a public-private partnership (Compañía García, 2020; Dietz & Cortés, 2020). However, different concerns arose on the technological divide and whether educational television effectively supports students already at risk before the pandemic (Baptista Lucio et al., 2020). Furthermore, almost a year after the mandatory school closures, it is still unknown how students and teachers have used educational television across the country and whether this instructional modality will result in differentiated learning loss, particularly affecting disadvantaged students (Pozas et al., 2021). In addition, there are no clear strategies for interventions addressing learning recovery when schools reopen after the pandemic. Under these conditions, it is not easy to anticipate how school communities and teachers will support students and their families once lockdown policies are lifted.

This chapter has four main goals: (a) to describe and analyze educational gaps that existed in Mexico before the pandemic, identifying the central educational policies implemented in previous decades; (b) to describe and analyze educational policies implemented during the pandemic and how these may disproportionately affect students at risk; (c) to conduct a prospective analysis to identify potential effects of the sanitary crisis in the administration of the education system in Mexico; and (d) to identify the main policy lessons resulting from the Mexican government response to the COVID-19 sanitary crisis.

## 6.2 Conditions Before the Pandemic

The Mexican education system is organized into three levels: basic, upper secondary, and tertiary education. The education system enrolls 36.5 million students, with 30.4 million in compulsory education (basic and upper secondary). It is largely publicly funded: 89% of students and 85% of teachers attend and work in schools supported by federal and local governments (SEP, 2020), and it is partially decentralized, with nearly 81.9% of the public schools currently managed by 31 state governments (SEP, 2020) (Table 6.1).

In Mexico, just like in other Latin American countries, there is an unequal distribution of educational opportunities, affecting the neediest population. As the Regional Report of the Global Education Monitoring Report 2020 (UNESCO, 2020) points



**Table 6.1** Basic education system in Mexico

		Students	Teachers	Schools
Basic education	Total	25,253,306	1,225,341	230,424
	Public	22,378,681	1,039,290	198,192
	Private	2,874,625	186,051	32,232

(SEP, 2020)

out, in Latin America, “the richest 20% are five times as likely as the poorest 20% to complete upper secondary school, on average”. The digital divide, inadequate instructional practices, lack of support for teachers and principals, inadequate information systems, low academic performance, and rigid—and sometimes outdated—national curricula remind us how the fair distribution of educational quality is still a pending issue in this region (Vegas & Petrow, 2007).

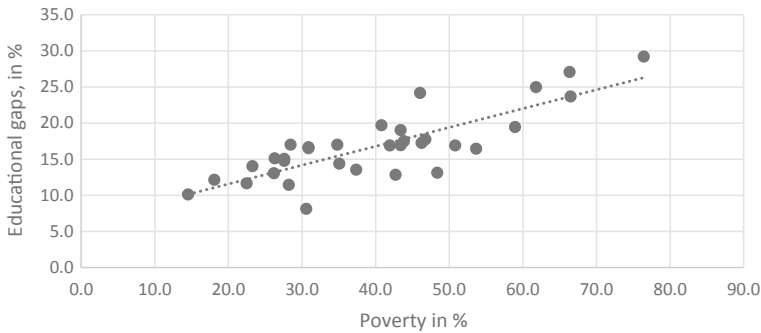
With more than 25 million students enrolled in basic education, 1.2 million teachers, and 230,424 schools, the COVID-19 sanitary crisis created enormous challenges for educational leaders in Mexico by showing the unequal distribution of educational quality across schools and regions (Lee & Koh, 2020; UNESCO, 2021).

Although in previous years there were positive trends (e.g., average years of schooling increased from 8.1 years in 2005 to 9.6 years in 2019 while adult illiteracy rates decreased from 8.4% in 2005 to 3.8% in 2019) (INEE, 2019), significant inequalities remain in the Mexican education system (INEE, 2019), and will increase due to school closures. These longstanding variations in available resources and academic results across regions and populations in Mexico (OECD, 2019) interacted with some of the pandemic’s effects, affecting emergency education program design.

There are several examples of the challenges faced before the pandemic. For instance, the education gap index, measuring the size of the population without access to compulsory education, shows that around 17% of the adult population included does not have access to basic education (CONEVAL, 2019), and this population group is mostly located in the country’s poorest regions (Fig. 6.1).

Dropout rates depicted another challenge the Mexican education system had to address during the pandemic. The pre-COVID analysis estimated that for the 2020–2021 school, yearly dropout rates would be 1.1% in primary school level, 5.3% in secondary schools, and 15.2% in high school (INEE, 2019), under normal operating conditions. Similar to other measurements, there are significant differences in this indicator across regions (rural vs. urban) and associated with ethnicity, suggesting additional challenges regarding the distribution of institutional capacities to support students at risk across the country.

Data from the national school census (*Formato 911*) corresponding to the most recent school year are not public. However, the Ministry of Education estimated a dropout rate of around 10% for basic education due to the pandemic in 2020, representing nearly 2.5 million students out of school (SEP, press briefing, August 8th, 2020). This figure highlights some of the future challenges for educational



**Fig. 6.1** Educational gaps and poverty levels in Mexico (2018), by states (CONEVAL, 2019)

authorities regarding the population’s size that will require flexible pathways for students to graduate from compulsory education.

Student academic achievement is a final factor in the estimation of gaps or inequalities across populations and regions. Regarding international assessments, published results point out significant academic performance gaps. Mexico reports “the highest share of students among OECD countries” in performance level two, considered “the minimum level to function in today’s societies” (OECD, 2019).

National evaluations present a similar trend. For instance, the National Plan for Learning Evaluation (PLANEA) is a national test administered in Mexican schools. The most recent secondary education results (2017) showed that, nearly 33.8% of assessed students in language performed at the lowest measured level from the national sample. However, when this analysis focused on students from rural schools, about 60% performed at the lowest level. Significant gaps were also reported on family income, ethnicity, rurality, poverty, and parents’ educational attainment. Finally, according to PISA results (2018), only 1% of Mexican students achieved the top performance level in at least one area, while 35% did not achieve a minimum level of performance.

Evidence suggests that student dropout is explained by different social and economic factors, like living in rural areas, parents’ educational attainment, current employment situation, and learning disabilities (Gibbs & Heaton, 2014). For instance, Campos-Vazquez and Santillan (Campos-Vazquez & Santillan, 2018) found that the lack of a secondary school located in a rural locality increases the probability of dropping out by 6.8%. In addition to this, more recent evidence suggests that the probability of completing upper secondary education is associated with socioeconomic and demographic factors, characteristics of educational institutions students attend, and previous educational experiences (Mendoza Cazarez, 2019).

These conditions are relevant since estimations suggest the population living below the national poverty line will increase to 9.8 million after the pandemic, compared to the previous estimate from 2018. Therefore, the percentage of people living in poverty will increase from 48.8% to 56%, or 56.7% after the pandemic (CONEVAL, 2020). Since available data shows that between 5 and 17% of children

between 5 and 14 years old do not attend school due to lack of financial resources, increasing the population living in poverty will result in additional educational gaps and inequalities to be addressed by post-COVID educational policies.

### **6.3 National and Local Government Responses to the COVID-19 Pandemic**

In January 2020, the first news about COVID-19 began to circulate in Mexico. However, it was not until March 14th when national health and education authorities determined schools should be closed for two weeks starting on March 23rd to decrease the transmission of COVID-19 (SEP, 2020). After this initial period of school closure, the Mexican government decided to extend it for two additional weeks, corresponding to the spring break. When this extension was informed, educational authorities still anticipated instructional activities would resume on April 20th.

The initial reaction defined how local education agencies dealt with the mandatory school closure. There was limited access to information, resulting in a short preparation period for school communities since there was an expectation to return to regular instructional activities promptly. Also, 11 out of the 32 states decided to implement school closures one week earlier than the original deadline recommended by the federal government, closing on March 16th. This decision represented even fewer days for preparation among school communities.

The lockdown finally occurred at the beginning of the second half of the school year. A return to regular instructional activities was announced and postponed several times. In early April, the Ministry of Education reported instructional activities would resume remotely. However, this decision resulted in a steep learning curve for teachers and educational authorities, who had to redesign instructional activities rapidly. Since the pandemic continued its course and the cases of COVID-19 continued to rise, Mexican authorities decided to continue the rest of the school year remotely and later, to start the 2020–2021 school year in a distance mode. This condition would remain for the rest of the school year.

#### **6.3.1 Main Strategies**

On April 20th, the Mexican government implemented a recently designed intervention, “Learning at Home”. This initiative was the primary strategy to support students during the health crisis. It was implemented by broadcasting and distributing educational programs through TV, internet, and radio, scheduling broadcast classes for

primary and lower secondary grades. This strategy was based on educational television since 92.5% of Mexican families report having a TV set (76.5% digital), (ENDUTIH) (INEGI, 2019).

The organization and implementation of this program were straightforward. There were different broadcast schedules reserved for each school grade. Each section lasted between 1 and 3 h, depending on the school grade. Different subjects were explained in each section, averaging about 30 min each. TV programs were broadcast on different channels and repeated three times a day, so students had several opportunities to watch them at different times based on what worked best for them or their families, or even to watch different sections to reinforce their learning.

The content corresponded to the official national curriculum, and it was supported by a set of free textbooks distributed to each student at the beginning of the school year. In addition to the TV programs, the course content was published on a website to help teachers prepare and support students. Although this content was not delivered on time in the early stages of the pandemic, affecting teachers' activities, the operation of this website later improved. Also, all programs became available on-demand on SEP's YouTube channel.

In addition to the design and distribution of educational materials, it was expected that teachers would keep in contact with students through phone calls, text messaging, video calls, and digital platforms. Teachers would assign homework and other learning activities and receive evidence of activities conducted at home. In the early stages of this program, teachers even had to submit a digital portfolio of educational experiences as proof of their work. Education authorities also organized professional development activities to support teachers in developing digital skills.

Although these actions were designed to reach most students, part of the population did not have access to television or the Internet since TV stations would cover only 70% of the national territory. Additionally, access to the Internet was only available to nearly 50% of households, systematically excluding student populations due to the digital divide and the emergency curriculum design (Amador Bautista, 2020). For these populations, the Ministry of Education considered delivering printed workbooks and broadcast content from this initiative through radio programs, addressing similar topics to those presented on TV, but with some variations. For the review conducted for this chapter, we were able to confirm that these programs considered primary-school level course content. The schedule for radio programs consisted of one hour every day for each grade, with 30 min allocated to a specific subject taught in each grade and the rest of the time allocated to teach a subject shared with a different school grade. Teachers also had to visit communities to distribute printed materials and provide feedback to students if possible.

In addition to the content designed for primary and secondary education, the Ministry of Education designed instructional materials for early childhood. In these cases, the Ministry designed programs as daily 30-min segments, addressing socio-emotional education, parenting practices, playing activities, and creativity development. A critical issue in implementing the "Learning at Home" program is the decrease in expected instructional time. Some studies point out a slight adaptation

**Table 6.2** Daily expected instructional time

Level	Official curriculum	Learning at home (TV)	Learning at home (radio)
Preschool	3	1	0
Primary	4.5	2.5	1
Lower Secondary	7	3	0

Adapted from SEP (2017) and the description of the Learning at Home Program

of the national curriculum, resulting in inadequate instructional practices (Ducoing, 2020).

The following Table 6.2 illustrates a significant decrease in instructional time reported for every educational level. By design, the Learning at Home TV or radio programs' instructional time would only be part of the students' daily learning activities since teachers would assign additional tasks. However, some studies found that nearly 30% of teachers were not in contact with their students (Baptista Lucio et al., 2020). Other studies suggest that up to 80% of students did not have access to technology (Magallanes Ulloa & Ávila González, 2020). Therefore, since teachers could not guide or support all students, the instructional time decreased, mainly affecting disadvantaged students.

Besides the Learning at Home program, the federal government promoted other interventions during the pandemic, including some already implemented before the lockdown. The "MexicoX" platform, where massive open online courses are available for free, is one example. This platform started in 2015, delivering courses aimed to support teacher professional development activities. During the pandemic, its academic contents were adapted to respond to school communities' needs, particularly for remote work and distance education, providing courses on risk prevention at school, cyberbullying, information literacy, and the use of virtual labs. Another initiative adapted to respond to the pandemic conditions was "aprende.mx". This program aims to develop digital and ICT skills among basic education teachers and students, establishing alliances with other programs and agencies such as Educational Television. Its main goal was to provide online training on digital skills, Microsoft Office 365 applications, lesson planning, educational technology, webinars, digital literacy, digital citizenship, and educational use of digital resources.

Besides the initiatives adopted by the Ministry of Education, other interventions were designed by federal education agencies, like the National Commission for Education Improvement (MEJOREDUE). This agency designed and implemented five professional development workshops to support teachers, school principals, supervisors, and pedagogical advisers. These courses were designed to be distributed online in an editable digital format. The main topics were how to adapt instructional practices, exert leadership, and implement supervision strategies during the pandemic (Comisión Nacional para la Mejora Continua de la Educación, 2020).

### 6.3.2 *Technological Platforms*

An important aspect to understand the Mexican education agencies' response during the pandemic is to analyze how technology platforms designed by Google for Education and Microsoft were used. Agreements signed with Google for Education allowed access to a dedicated website, more than 16 million email accounts for basic-level educational actors, organization of professional development activities through webinars, and distributing digital educational materials aligned with the official curriculum (SEP, 2020). The agreement signed with Microsoft granted access to the Mexican government to accounts and digital tools for distance education and online training (SEP, 2020). Due to these agreements, teachers had access to alternatives to implement distance education. Also, local education agencies across the country had access to these platforms to complement the Learning at Home program. These platforms were part of the central policy to provide support and feedback directly to students and gather evidence to facilitate learning evaluation. However, it is essential to remember the limitations regarding connectivity: according to a national survey administered by the Mexican government, only 56.4% of Mexican families have access to internet services, and 44.3% of families have a personal computer at home (INEGI, 2019).

### 6.3.3 *Local Government Responses*

An essential characteristic of the Mexican education system is its decentralized operation. Although with some legal limitations, state governments design and implement different local initiatives to support students. A review of different efforts implemented to complement the Ministry of Education's national strategy during the pandemic highlights different initiatives, mainly related to professional development activities, connectivity, and support to families and parents. Table 6.3 describes some of these interventions.

Despite the significant challenges the pandemic created and the difficulties it represented for all the actors involved in education, there are valuable experiences from which we can learn and effective practices to be considered for long-term implementation. For instance, the rapid digitalization process of instructional activities and the skills developed by teachers and students necessary to implement the "Learning at Home" program allowed them to interact virtually. It opened doors to diversify instructional practices, as some surveys administered to teachers across the country suggest (Baptista Lucio et al., 2020). Experiences of better coordination and collaboration across different educational communities have also been reported, such as the adaptation of the "*Proyecto Medición Independiente de Aprendizajes*" (MIA), a model designed to adapt the curriculum to students' individual conditions (Hevia, 2020). Besides, teachers' creativity, commitment, and efforts to provide a solution to distance work are noticeable, especially in communities without access to the

**Table 6.3** State government interventions

Area	Example
Professional development	Courses on digital literacy, digital educational skills, use of tools and technological platforms in addition to those implemented at the national level
Technical support	Call centers to support teachers
Certifications	Tools and resources: Google for Education, National Geographic
Educational materials	Repositories for instructional resources, tutorials, and activities aligned with the learning at home program
Monitoring activities	Assessment of student learning, surveys to learn about students' opinions, guidance for evaluation
Equipment and connectivity	Distribution of computers and tablets to teachers and students, connectivity in schools
Support networks	Online meetings, conferences, webinars, repositories of best teaching practices
Information	Information on topics such as hygiene, health, risk prevention, digital citizenship, cybersecurity
Scholarships	For orphaned students due to COVID-19
Support for parents	Guidance and resources for families, mental health care resources and training for teachers

Internet, television, or radio. Although these are isolated experiences, much can be learned from these experiences: documentation, systematization, and dissemination work conducted by education authorities could convert a crisis into a learning experience for the entire education system, particularly to inform innovations aimed to support disadvantaged populations.

## 6.4 What Do We Know About the Effects of the Pandemic in Mexico?

There is preliminary data on the effects of the different programs implemented during the pandemic. For instance, MEJOREDUC, a public agency coordinating the National System for the Continuous Improvement of Education (Comisión Nacional para la Mejora Continua de la Educación, 2020), administered a survey to teachers, principals, students, and families in June 2020. Nearly 194,000 persons from all over the country responded to their electronic survey, with almost 15,035 school principals (5,442 from pre-school, 5,426 from elementary school and 4167 from middle school); 71,419 teachers (20,025 in preschool, 27,624 in elementary school and 23,770 in middle school); 72,305 parents (19,711 in preschool, 31,535 in elementary school and 21,059 in middle school), and 34,990 students (10,299 elementary school and 24,691 middle school). The survey sample design was not probabilistic due to

the public health restrictions, although the response rate was high. The information collected allows us to describe experiences and perceptions regarding instructional activities during the lockdown. The main results for teachers and students are described as follows.

#### Teachers:

- 75.4% of teachers designed their own instructional activities and resources (YouTube channels, groups on social networks, blogs, worksheets), in addition to Learning at Home offerings.
- According to 69.8% of the teachers, parents were not able to provide support to students.
- 51.4% of teachers consider online activities, television, and radio programs to be boring.
- Content of the Learning at Home program was not enough to facilitate students to continue learning, according to 46.3% of the teachers surveyed.
- The main technological tools available for teachers were cell phones with internet access (87.2%), home computers (73.9%), television (58.3%), with lower access to TV programs in highly marginalized municipalities (39%).
- Regarding professional development activities to support the implementation of distance education, only 56.2% of teachers acknowledged receiving adequate support.
- Providing adequate feedback for students was one of the main challenges, according to 57.4% of the surveyed teachers.
- Teachers reported an increase of more than 50% in their telephone, internet, and electricity bills.

This information confirmed that teachers faced considerable challenges to continue instructional activities during the early stages of the pandemic. Additionally, it points out how technology and family resources were not equally available or distributed, increasing pressure on teachers to support students lacking resources or support from their families.

#### Students:

- Communication between students and teachers has been mainly through messaging apps or telephone calls: WhatsApp (58.3%), telephone calls (41.5%), video calls (24.5%), and email (27.3%).
- 94.5% of primary school and 69.7% of secondary school students required support from their mothers, fathers, or caregivers.
- Not every student had access to the benefits of the “Learning at Home” program. 61.9% reported they received materials and resources from the school, while only 56.7% stated they frequently used the Learning at Home resources.
- Around half of students relied on digital platforms: 65.5% always or regularly used the Google for Education platform, but only 45.3% used the online resources of Learning at Home.



- Students reported that the main problems they experienced were the lack of support from teachers, a lack of clarity in their instructional activities, and the limited feedback on their academic activities.
- More than 60% of the surveyed students reported having enough physical space to do their homework. However, only 37% in primary school and 49% in secondary school had access to a computer for instructional activities at home.

This information confirms the difficulties faced by school communities, pointing out the limitations of this distance education model and the unequal availability of resources across students.

In addition to the survey administered by MEJOREDU, universities and civil society groups also collected data. For instance, *Juntos por el Aprendizaje*<sup>1</sup> (2020) and the School of Government and Public Transformation of the ITESM (2020) are two examples of available data to analyze how the education system operated during the health crisis. Although none of the surveys represent the educational system as a whole, their results allow for comparing information and guiding potential interventions to address the most pressing issues.

*Juntos por el Aprendizaje* found that parents, teachers, principals, and supervisors reported similar conditions regarding schoolwork perceptions during the lockdown. The strategies teachers and students found most helpful were distributing digital resources, using portfolios, and providing individual tutoring for students. The most used platforms were Zoom, WhatsApp, and Google Meet.

Almost all of the surveyed students reported having internet access, and all reported having at least one device to access digital content. Also, communication between parents and teachers increased. In contrast, communication between principals and parents decreased. More than 70% of school principals and teachers agreed they had digital skills to search for information on the internet and create and distribute instructional material. However, all considered, they needed support to facilitate students' school activities, mainly in technology and socio-emotional fields. Regarding challenges, more than half of the surveyed school principals and teachers reported feeling more stressed than before. The most significant challenges perceived by students are those related to socio-emotional and learning aspects; in the case of teachers, there are administrative and technological obstacles that continuously add pressure.

Similarly, the School of Government and Public Transformation of the ITESM (2020) administered another survey, focused on collecting parents' perceptions, specifically about the "Learning at Home" program. This study was conducted during October 2020, 7 months after the school closures, and it was administered to 500 parents whose children attend public schools. Among the main findings is that 70% of

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<sup>1</sup> *Juntos por el Aprendizaje* is an initiative supported by different educational independent groups. They conducted the survey "Education during the COVID-19 contingency" (*Juntos por el Aprendizaje*, 2020) during May and June 2020, that is, three months after the closing of the schools and the start of remote schoolwork. This survey was administered to parents, teachers, principals, and supervisors (65% public schools and 35% from private schools), for a total sample of 7,114 respondents.

parents considered that the lack of face-to-face instructional activities affected their children emotionally. More than half of parents surveyed detected anger, anxiety, and sadness in their children. 90% of surveyed parents had access to a television device or a cell phone, and 70% had access to the internet. However, parents reported that their children do not like or are not interested in the televised lessons. Also, 80% of surveyed parents considered televised classes to be less effective than face-to-face lessons. In comparison 62% expressed the need to get better support from teachers since parents addressed most of the questions raised by students about classes and homework in this period. 75% maintained contact with school staff, but only 16% reported they had observed good feedback from teachers. Among some worrying aspects, three stand out: their children are not interested in continuing their studies, the students' difficulty concentrating increased, and parents observed reduced initiative on behalf of students to study without teacher support (Fernández et al., 2020).

Other studies pointed out additional perceived effects among students. For instance, in a study conducted in a Mexican state, 21.3% of surveyed students considered that their learning experiences were affected due to the COVID-19 crisis. In comparison, 47.3% believe finding a job will be more challenging when they finish their studies.

Recently, the National Institute of Statistics and Geography (INEGI, 2021) administered a Survey to Measure the Impact of COVID-19 on Education (*Encuesta para la Medición del Impacto COVID-19 en la Educación*). Among the findings, it is worth noting that 738,394 students did not complete the 2019–2020 school year; the percentage of male students who dropped out (2.1% in public schools and 5.5% in private) is slightly higher compared to female students (1.9% in public schools and 2.8% in private). 58.9% of these students dropped out due to reasons associated with the pandemic, including loss of contact with their teachers, decrease in household income, permanent school closure, or because they lacked access to the internet and technological devices. The remaining 41.1% of students mentioned other reasons, such as the need to find a job and the lack of funding. This report also highlights that around 5.2 million students did not enroll in the 2020–2021 school year. 44.2% of students reported not enrolling due to COVID-19, and 55.8% did not enroll because of a lack of financial resources. The survey pointed out that the percentage of male students who did not enroll (10.1%) is slightly higher than that female students (9.1%). It is worth noting that out of the 5.2 million students who did not enroll in the current school year, 2.9 million (57%) belong within the basic education level (Table 6.4).

Regarding those who did not enroll in the 2020–2021 school year due to COVID-19, 26.6% of students expressed that classes held on a distance model were not functional, 25.3% did not enroll because their parents were unemployed, and 21.9% did not enroll because of a lack of technological devices or access to the Internet.

It is important to note that out of the 32.9 million students enrolled in the 2020–2021 school year, 30.3% indicated that they had not received support from a member of the household with their schoolwork; this situation is worse at the secondary level, where 48.3% of the students reported not receiving support. Finally, a significant

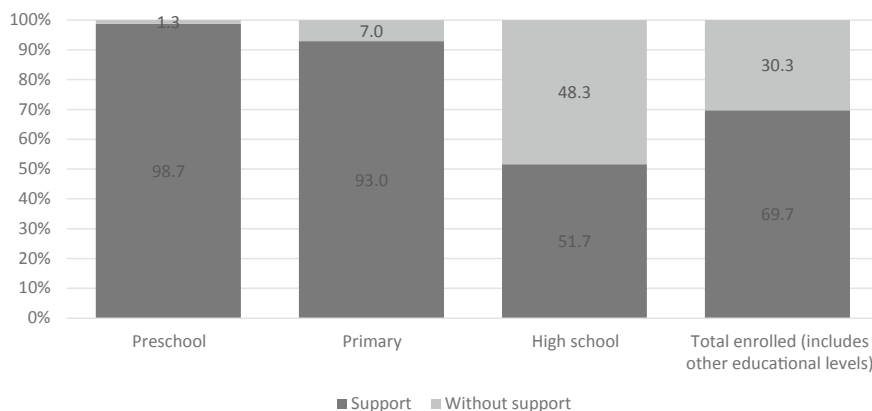
**Table 6.4** Dropout in education due to COVID-19 as estimated by the INEGI survey

Level	Students who dropped out during the 2019–2020 school year			Students who did not enroll in the 2020–2021 school year, due to COVID-19 or because of lack of resources		
	Total	%		Total	%	
		COVID-19	Another reason		COVID-19	Lack of financial resources
Preschool	98,163	94.7	5.3	737,992	86.9	13.1
Primary	146,065	73.2	26.8	753,997	32.5	67.5
High school	219,181	57.7	42.3	1,493,528	30.9	69.1
Other	274,985	39.6	60.4	2,244,397	43.0	57.0
Total	738,394	58.9	41.1	5,229,914	44.2	55.8

Source Own elaboration based on INEGI (2021)

percentage of the students interviewed declared that they are willing to return to face-to-face classes if the government allows it (Fig. 6.2 and Table 6.5).

Despite differences across the surveys regarding the sample and timing, collected data provides a panoramic vision of the educational system's situation around the public health crisis. The recurring challenges are supporting students and teachers regarding socio-emotional aspects and technology use, both in terms of access and teacher professional development. Any intervention in these areas needs to go beyond technical aspects like hardware and focus on a pedagogical approach for a more motivating and practical use. It is essential to understand that none of the surveys presented focuses specifically on the most vulnerable population, particularly those



**Fig. 6.2** Distribution of the population aged 3–29 enrolled in the 2020–2021 school year. Source SEP (2020)

**Table 6.5** Percentage distribution of the population aged 3–29 enrolled in the 2020–2021 school year by availability to attend face-to-face classes if the government allows it in the current school year, by age groups

Age	Willingness to return to face-to-face classes		
	High	Medium	Little or nothing
3–5	53.8	16.5	29.7
6–12	60.7	18	21.4
13–18	64.1	15.4	20.6
19–29	55.9	16.1	28

*Source* Own elaboration based on INEGI (2021)

located in rural contexts without access to the technology through which these surveys were administered. By the end of the 2020–2021 school year, a detailed diagnosis of student and teacher performance is yet to be reported. Also, the publication of information about enrollment and dropout rates is still pending, and there is a need to administer representative surveys to assess different populations' conditions. This information will be valuable to design policies and interventions to mitigate the negative impacts of school closures in the years following the pandemic.

## 6.5 What Do We Know About Potential Interventions?

We still know very little about the actual magnitude of the effects the COVID-19 crisis will ultimately have in Mexico. Initial global estimates identify potential significant losses in academic achievement (Azevedo et al., 2020a) and personal income (Psacharopoulos et al., 2020). Other studies describe potential adverse effects in dropout rates, concluding that more than 9 million students may permanently be out of school, nearly 40% of them from low-income families (Acevedo et al., 2020). These estimates point out the importance of implementing timely and effective government interventions. Furthermore, it reminds us about the relevance of adopting a “Building Back Better” approach once schools reopen. Adopting this approach would mean prioritizing the most vulnerable populations and promoting a redesign of public institutions to avoid the reproduction and continuity of unfair educational inequalities that characterized educational systems before and during the pandemic. The effectiveness of national government interventions to address the negative consequences of the COVID-19 pandemic depends directly on the availability of robust scientific evidence regarding causes and corresponding interventions. Despite some limitations, available research highlights the leading causes explaining some of the inequalities associated with the COVID-19 crisis, like the digital divide, differences in the cultural capital across families, inadequate learning environments at home, mental health issues, unemployment, lack of educational materials, nutritional deficiencies, and the low quality of available distance education programs (Acevedo

et al., 2020; Akmal et al., 2020; Aristovnik et al., 2020; Asanov et al., 2020a; Dorn et al., 2020; Grewenig et al., 2020; Hanushek & Woessmann, 2020; Lopez Boo et al., 2017; Lustig et al., 2020; UNESCO, UNICEF, & The World Bank, 2020).

Identification and analysis of these causes will help evaluate the feasibility and potential effects of educational interventions. Available research identifies different interventions, like promoting collaboration across education and public health agencies, implementing programs to specifically reduce dropout rates, designing summer learning programs, providing free access to the Internet, and modifying grading criteria. Other suggested interventions include organizing workshops to teach students how to use distance learning platforms, supporting students and families in creating and improving learning environments at home, distribution of scholarships and conditional cash transfer programs, nutrition programs, and psychological support. Regardless of the combination of interventions, it is essential to emphasize that learning recovery programs must be prioritized (Acevedo et al., 2020; Akmal et al., 2020; Aristovnik et al., 2020; Asanov et al., 2020a, b; Dorn et al., 2020; Grewenig et al., 2020; Hanushek & Woessmann, 2020; Lopez Boo et al., 2017; Lustig et al., 2020; Marinoni et al., 2020; Reimers & Schleicher, 2020; Sanchez et al., 2020). As expected, these recommendations provide some insights regarding different options governments have to address educational inequalities in a post-pandemic period.

### **6.5.1 Policy Options**

As pointed out, several restrictions limit the evaluation of currently implemented programs, and therefore the identification of preliminary results. Most of the available research is still descriptive, with limited access to program evaluations. Furthermore, to the best of our knowledge, no official estimation of current dropout rates has been published. These conditions limit the potential use of evidence to support different policy options. Therefore, some options suggested are mainly based on assumptions resulting from comparative analysis or broad international recommendations. However, it is necessary to understand the context and collect new evidence to better explain how the education system will respond to challenges resulting from school closures. The following activities are supported by available studies as an incremental approach to be explored considering there is still limited information on potential educational policies to be implemented in a post-COVID recovery period.

#### **(a) Improve information collected**

The described conditions anticipate challenging contexts for school communities. The interaction between old and new educational inequalities will result in a complex context to design recovery policies. The reviewed interventions represent different approaches, whose effectiveness in Mexico's case might be difficult to evaluate since there is limited data about current enrollment, dropout rates, and the effectiveness of the different policies implemented during the public health crisis. An essential initial

activity is to assess the conditions currently observed in the education system in this context. Collecting reliable and updated information is necessary to understand key aspects, like how teachers interacted with students, or how school communities supported teachers and school principals. Data from three sources will be needed in the first stage: schools, families, and students who abandoned formal education programs. The following Table 6.6 describes specific information needs to conduct a preliminary diagnostic.

Collecting reliable data is a priority since currently available information is not nationally representative in several cases, and there is a limited analysis regarding current students' and teachers' conditions. Furthermore, there is limited analysis and information about the type of instructional practices implemented, how students were taught or monitored, as well as how teachers may address learning loss problems once schools reopen.

### (b) Learning recovery programs

The information collected suggests a significant part of the student population in Mexico has experienced substantial challenges to continue learning during the pandemic. As available data points out, the distribution of students across academic performance levels in national tests administered before the pandemic demonstrates that a significant percentage of the population did not achieve adequate academic performance before the interruption of classes. Given the expected differentiated effects on student performance, the design and implementation of learning recovery programs will be required.

**Table 6.6** Information to be collected

Group	Information
Students	<ul style="list-style-type: none"> <li>– Learning assessment</li> <li>– Socio-emotional status</li> <li>– Specific needs based on individual characteristics (family status, special education, immigrant condition)</li> <li>– Health conditions</li> </ul>
Teachers	<ul style="list-style-type: none"> <li>– Socio-emotional status</li> <li>– Knowledge of effective teaching practices</li> <li>– Demands for professional development activities</li> <li>– Health conditions</li> </ul>
School principals	<ul style="list-style-type: none"> <li>– Information about infrastructure and educational materials available in schools</li> <li>– Socio-emotional status</li> <li>– Health conditions</li> <li>– Evaluation of community conditions</li> </ul>
Out of school students	<ul style="list-style-type: none"> <li>– Socio-emotional status</li> <li>– Health conditions</li> <li>– Factors explaining dropout</li> <li>– Future plans and specific needs</li> <li>– Perceptions on policy options</li> </ul>

An essential aspect is the capacity to identify non-traditional venues to provide additional learning opportunities to disadvantaged students. An effective intervention will require exploring interventions like modified curriculums, diversification of instructional materials and activities, extended school days or years, education technology (repositories and digitalized materials), afterschool activities, intensive summer learning programs, hiring specialized teachers to accelerate learning, and most importantly, the adoption of these initiatives in nearly every school in the country.

To implement learning recovery programs, the participation of parents will be essential in the post-pandemic stage. As the different surveys pointed out, parents' roles in supporting students at home determined better learning experiences. Unfortunately, policies designed to promote parental involvement in Mexico have not been effective (Flores-crespo & Ramírez Ramón, 2015; Martin & Flores, 2015).

Regardless of the limited parental involvement observed before the pandemic, its associated positive effects with academic performance (Martínez Rizo, 2004) suggest promoting their involvement will be an effective strategy to complement instructional activities at schools. Since learning recovery requires exploring any venue outside of schools, defining new policies to encourage parental involvement will be necessary to diversify interventions and increase school effectiveness to support disadvantaged students.

#### **(c) Adopting a lifelong learning approach**

Lifelong learning policies create learning opportunities “rooted in the integration of learning and living, covering learning activities for people of all ages (children, young people, adults and the elderly, girls and boys, women and men), in all life-wide contexts (family, school, community centers, museums, workplaces) and through a variety of modalities (formal, non-formal, and informal)” (UIL, n.d.). Adopting flexible approaches to create multiple learning opportunities inside and outside schools will be necessary during the recovery process. Considering these characteristics, adoption of this approach may result in (a) increasing and diversifying the number of stakeholders involved in the reorganization of education systems; and (b) creating “safety networks” to support drop-out students by promoting flexible learning pathways and reorganizing non-formal school options. Adopting this approach may result in different benefits, including the collaboration of local authorities, the diversification of learning delivery methods, and increased participation and funding to support recovery programs.

#### **(d) Increased funding**

As pointed out in different reports on post-COVID 19 educational policies, implementing recovery programs will increase the pressure to increase and improve educational spending. In Mexico, educational spending equals 6.1% of the GDP, with nearly one-third allocated to basic education. A problem to be considered for the post-COVID period is that nearly 98% of current educational spending is allocated to salaries, making it challenging to fund additional recovery programs, like extended school days, after-school activities, or summer programs.

Based on the only officially published dropout rate for basic education during the lockdown, estimated at 10% (representing about 2.5 million students), creating out-of-school learning opportunities to obtain a basic education diploma will require investing nearly 344 million US dollars. Likewise, based on the number of students who were not enrolled in basic education in the 2020–2021 school year (INEGI, 2021), creating out-of-school learning opportunities would require nearly 406 million US dollars. These estimations are obtained based on current spending on adult education programs. Furthermore, the worst-case scenario described in Table 6.7 would mean investing 665.1 million dollars, increasing by sixfold the current federal budget allocated to INEA, the National Adult Education Agency (Fig. 6.3).

**Table 6.7** Required investment

Dropout rate	Scenarios according to dropout rates					
	19%	13.3%	10%	8.0%	4.6%	2.1%
US million dollars	665.1	406.5	343.8	245.1	157.3	71.1
GDP %	0.05	0.03	0.03	0.02	0.01	0.01

Source Own elaboration

19% is based on dropout for upper secondary education (SEP, 2021)

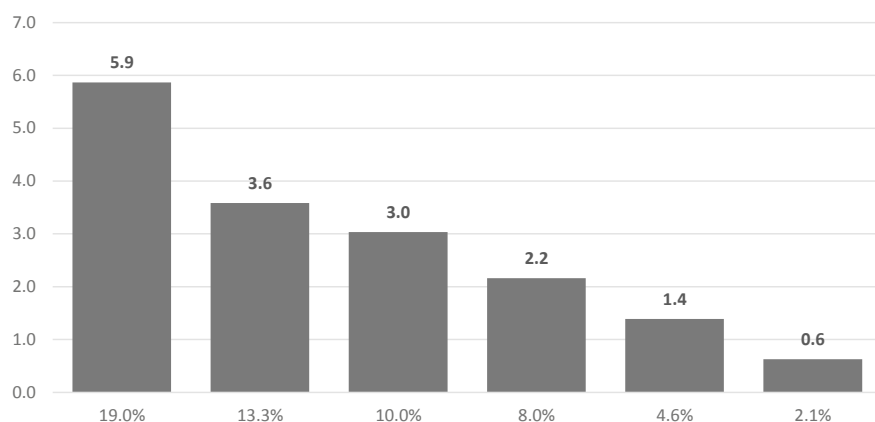
13.3% is based on the number of students who were not enrolled in basic education in the 2020–2021 school year (INEGI, 2021)

10% is based on official estimated dropout for basic education during lockdown

8.0% is based on the number of students who were enrolled in the 2019–2020 school year and are not enrolled in 2020–2021 due to COVID-19 or lack of resources according to type of school (INEGI, 2021)

4.6% is based on dropout for secondary education (SEP, 2021)

2.1% is based on the highest level of dropout in primary education (SEP, 2021)



**Fig. 6.3** Ratio total cost of reinserting/ current federal budget allocated to INEA, in number of times



As in previous recommendations, these estimations may help to identify some of the potential challenges to be addressed in a Post-COVID period. A more detailed estimation will require identifying strategies to be explored in the near future, in addition to better identifying target populations.

## 6.6 Final Comments

Beyond the ideal selection and implementation of specific interventions or programs supported by evidence, there are three key aspects to be considered by decision-makers during the design of education recovery plans in Mexico. First, it is necessary to raise awareness among national actors and stakeholders about the magnitude and seriousness of the post-COVID education crisis. Raising awareness is crucial since that may help to increase the public education budget. Furthermore, it is necessary to effectively communicate that any effort to address educational inequalities associated with the COVID-19 crisis will require a long-term commitment, considering periods of at least nine or ten years.

The second aspect is that a policy window is now open to promote significant transformations on how education systems in the region must be organized. This situation opens an opportunity to diversify delivery methods (mainly through digitalization) and promote the adoption of lifelong learning policies since non-formal and informal education programs might become effective routes to develop skills among disadvantaged populations, including those who drop out from formal education programs. It can also help engage new educational actors (like local governments, community centers, or museums) and promote flexible and diverse learning opportunities. In other words, the design of educational policies in a post-pandemic period may result in an opportunity to organize strategies to create all kinds of learning opportunities - formal, non-formal, and informal. Finally, implementing an education recovery plan may inadvertently create new inequalities or deepen inequalities resulting from previous decisions, contexts, or policies. Reducing unfair conditions must be a permanent guiding principle while defining any intervention or recovery plan's characteristics.

The COVID-19 pandemic brought new and unpredictable challenges to education systems. However, almost 12 months after the school closures, it is necessary to understand better the harmful effects of the COVID contention measures in Mexico, the characteristics of the exacerbated educational inequalities, and how school communities may respond to these challenges. Furthermore, it is essential to design potential interventions considering the pandemic's long-term effects, avoiding a simplistic perspective where the simple reopening of schools (a "business as usual approach") will be the main—and only—immediate policy goal.

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**Sergio Cárdenas** is an associate professor in the Department of Public Administration at the Center for Economic Research and Teaching in Mexico (CIDE). He is also part of the Global Education Innovation Initiative and former editor of the journal “Reformas y Políticas Educativas”.

**Dulce Lomelí** earned a bachelor’s degree in education from the University of La Salle Bajío. She holds a master’s in management of Educational Centers from the University of Barcelona and a master’s in Educational Policies from CREFAL. She currently works in projects to integrate technology in schools.

**Ignacio Ruelas** earned a bachelor’s degree from the Universidad Autónoma de Aguascalientes. He also holds a master’s degree in Public Policy from the Universidad de Chile. He is a research Assistant in the Department of Public Administration at the Center for Economics Research and Teaching (CIDE).

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# Chapter 7

## Homeschooling in Norway During the Pandemic-Digital Learning with Unequal Access to Qualified Help at Home and Unequal Learning Opportunities Provided by the School



Marte Blikstad-Balas, Astrid Roe, Cecilie Pedersen Dalland, and Kirsti Klette

**Abstract** The COVID-19 pandemic has forced an unprecedented global shutdown that has greatly changed what it means to be a teacher, a student, and even a parent in the months that schools have been closed. While most school systems normally require daily physical attendance and bring students together in large groups to learn in a collective endeavor, the closing of schools and the months of social distancing have shifted the site of learning to the home, where learning happens primarily alone or with the help of family members through the technologies available. In this chapter, we report on how school shutdown has affected the students in Grades 1–10 across Norway, where teachers in March 2020 were asked to perform all their teaching from home, through digital devices and remote teaching. As in other countries, Norwegian teachers and school leaders were not prepared to go digital overnight, despite good technological infrastructure and a curriculum that explicitly emphasizes the importance of digital competence across subjects. Drawing on a national survey administered to parents ( $N = 4,642$ ) about how digital homeschooling was organized, we have investigated what kind of educational opportunities students were offered during the period of remote teaching. Our key findings are that digital home schooling to a large degree consisted of students doing individual tasks, with limited support from their teachers, especially in the lowest grades. We discuss how the unequal access to qualified help at home challenges some of the core ideals of the Nordic model of education—where equal opportunities to learn is a key ambition.

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M. Blikstad-Balas (✉) · A. Roe · C. P. Dalland · K. Klette  
Faculty of Educational Sciences, University of Oslo, Oslo, Norway  
e-mail: [marte.blikstad-balas@ils.uio.no](mailto:marte.blikstad-balas@ils.uio.no)

## 7.1 Introduction

In this chapter, we will investigate how the Norwegian government responded to the international COVID-19 outbreak and discuss what measures were taken to ensure equal learning opportunities for all students regardless of socioeconomic background—something that is a key tenet of the Nordic Model of education (Klette, 2018). The Norwegian authorities announced the first cases of confirmed coronavirus in Norway on February 27, 2020, stating that they were closely monitoring the situation. By March 13, several restrictions in all areas of society were implemented, aiming to suppress the virus and keep the Pandemic under control. In addition to strict social distancing rules limiting the number of people who could interact with each other and the distance to be kept in all situations outside fixed “cohorts,” a major change for most Norwegians was the restriction on where they could work or study. Beginning on March 13, all educational institutions were closed, and all citizens were encouraged to avoid any unnecessary use of public transportation and work from a temporary home office if they were capable of doing so. The regulations presented in March 2020 are considered the severest national regulations since Norway was occupied during World War II.

All education normally happening in Norwegian daycare, kindergartens, schools, and universities was suddenly replaced by so-called “homeschooling” or “remote learning” in line with school closures in other countries.<sup>1</sup> Around the world, leaders expressed concern about the expected global learning losses resulting from the Pandemic (Azevedo et al., 2020; Azevedo et al., chapter 16; Kuhfeld et al., 2020) despite a general global consensus that education for all should still be prioritized even with closed physical school buildings (Reimers, 2020). Another question of global interest was what curriculum teachers should use during the Pandemic (Daniel, 2020) and how schools could ensure equal learning opportunities to all students when all students were sent home (Azevedo et al., chapter 16; OECD, 2018).

In Norway, unlike many other countries, the Pandemic did not cause a reprioritization of the national curriculum or new educational policies at the national level. All Norwegian municipalities (“school owners”) are responsible for ensuring that their school is managed in accordance with the Act relating to Primary and Secondary Education (the Education Act, 1998). During the Pandemic, these municipalities also became responsible for appropriate infection control measures (the Norwegian Directorate of Health, 2020). The school owner is always obligated to ensure that all students receive a formal education in accordance with both the National curriculum and the Education Act, even if the schools are closed or have limited capacity (The Norwegian Directorate for Education and Training, 2021b). Hence, the municipality level should, as far as possible, follow the established subjects and teaching hour distribution in periods when schools are closed or subject to other restrictions, and they should only provide fewer teaching hours if they can justify why this is necessary. Overall, the teaching should provide an opportunity for the students to achieve

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<sup>1</sup> Some daycare centers, kindergartens, and schools were kept open for the children of people with critical functions in society during the Pandemic (e.g., health services, transportation, infrastructure).

the competence aims in all subjects—and it should be emphasized that this expectation was not lowered during the Pandemic. In the case of students with specialized needs, such as students who are entitled to special needs education or other forms of personalized support, the temporary act passed in relation to COVID-19, allows for the school owner to adjust in their education if it is necessary and justifiable (Temporary Act on adaptations in the Kindergarten Act, the Education Act, and the Free School Act to remedy consequences of outbreaks of COVID-19, 2020).

## 7.2 The Norwegian Context

As a backdrop for the Norwegian response to the Pandemic, we will provide some key facts about the Norwegian school system and how it compares to other countries. Since the end of World War II, equal opportunity for all has been a cornerstone of the Nordic model for education—and the Nordic model is internationally known to emphasize features that are critical for high quality education (Klette, 2018). In Norway, all children have a legal right to 13 years of free education, starting at age 6, and a vast majority of students (96%) attend public school rather than private (Norwegian Directorate for Education and Training, 2020). Norway does not allow private owners to make any profit from their educational activities. Further, the establishment of a private school is only allowed if the school follows an alternative pedagogy (e.g., Montessori schools) or if they are religious schools. The few private schools in Norway still must follow the national curriculum (Klette, 2018).

The Norwegian compulsory school system is divided into two parts: primary school (ages 6–13) and secondary school. Primary school consists of the lower primary level (grades 1–4, ages 6–10), the intermediate level (grades 5–7, ages 10–12), and lower secondary school (ages 13–16). The school year goes from August to June. Students receive only formative feedback until grade 8, when they begin receiving grades. As in the other Nordic countries, the school system is considered a key approach to ensure a fair and equal society supporting democracy, participation, welfare, and life-long learning for all, regardless of their social, economic, and geographical background (Klette, 2018).

Norwegian students are still performing at or above the OECD average in science, reading, and mathematics as measured on the international PISA test. The PISA results show little variation in test scores compared with other countries, indicating that Norwegian schools are “broadly able to offer an equitable education to pupils from different backgrounds and that the vast majority of schools have pupils performing at different proficiency levels” (Norwegian Directorate for Education and Training, 2020, p. 35). While there is no country in the world that can claim to have eliminated socio-economic inequalities in education, the egalitarian Scandinavian countries have higher levels of social mobility than more unequal countries (OECD, 2018). Diversity in students’ ethnic backgrounds has changed in recent decades, and 18% of all students in compulsory education in 2019 had an immigrant background.



These students generally do well in the Norwegian education system, although their grades are slightly lower compared to other students (Norwegian Directorate for Education and Training, 2020).

Teachers in Norway have great autonomy in deciding how to adapt the national curriculum and teach their subjects, since the national curriculum is a framework indicating overall thematic areas and goals (Mølsted & Karseth, 2016; Sivesind & Wahlström, 2016) that leaves it up to each local school and teachers to decide when and how to teach a specific content area and topic. This means that the teachers and schools are supposed to make deliberate interpretations of the curriculum, such as determining their pedagogical methods and deciding which resources (e.g., apps and software) to include. Mausethagen & Møstad (2015) summarize Norwegian teachers' autonomy by pointing to three factors (1) pedagogical freedom and absence of control; (2) the will and capacity to justify practices and (3) a local responsibility (municipalities as school owners). As we will show, teacher autonomy becomes particularly visible during homeschooling, as schools and teachers might interpret and structure the homeschooling situation differently when it comes to required attendance, checking in, and assignment requirements. Also, the lack of national high stakes control such as teacher evaluation and national high stakes testing and exit exams give a high degree of autonomy, but also responsibility (Hatch, 2013; Hatch et al., 2020), to Norwegian teachers.

Teachers' high autonomy became particularly visible during homeschooling. While attendance at school was not suspended during the Pandemic, each school, and even each teacher, decided how often students should participate (e.g., by logging into Zoom or Teams at particular times or by handing in tasks by given deadlines). Each school had autonomy to make all decisions about the organization of remote schooling, and the only national decision was that all national final exams (normally held in May) were cancelled for 2020 and 2021. The defined main mandate of teachers in Norway to plan, deliver, and assess the learning of each student—and the class as a whole (Norwegian Directorate for Education and Training, 2020)—was never questioned during the Pandemic. However, the authorities made no national efforts to support teachers in reaching all students digitally or to supplement the education of marginalized students who need extra support. Further, no national measures were in place to compensate for the discrepancy between the students who had access to their parents at home during remote teaching and those who did not. This does not mean that individual teachers were not following up their students, but it does mean that there were no national guidelines or support to make sure such help was consistent. When reading the other contributions of this book, it becomes evident that compared to several other countries, Norway did very little on a national level to ensure equality in education for all students during the time of school lockdown.

### 7.3 Pandemic Pedagogy: Digitally Mediated Learning

While some countries supported remote teaching through resources like books, educational TV classrooms, and even radio (Miks & McIlwaine, 2020, UNESCO/UNICEF/World Bank, 2020), the strong digital infrastructure in Norway made it natural that all remote teaching should be digitally mediated education using the digital platforms already established in schools. Norwegian educational policies and national curricula have made digital competence an explicit aim for decades, and teachers are supposed to draw on digital technology across grades and subjects (Erstad, 2006; Wieberg Klausen, 2020). In the compulsory and secondary education reform of 2006, the *Knowledge Promotion*, five skills were defined as basic to learning in school, work, and social life. These skills are basic in the sense that they are considered fundamental to learning across all school subjects as well as a prerequisite for students to show their competence and qualifications within and across subjects. One of these skills are digital skills (The Norwegian Directorate for Education and Training, 2012). Digital skills are defined as being able to use different digital tools, media, and resources efficiently and responsibly, to solve practical tasks, find and process information, design digital products and communicate content. Further, digital skills include developing digital judgment by acquiring knowledge and good strategies for using the Internet (The Norwegian Directorate for Education and Training). These skills should permeate all subjects and be used when relevant, and it is up to each teacher to make all decisions on digital technology, within the limitations of what hardware and software the school has made available.

One key prerequisite for success in school with going digital overnight is that there is sufficient access to equipment and stable internet. Internet access at home has repeatedly been measured at 98% of the population (e.g., Statistics Norway, 2020), and students' overall access to technology has been significantly above the European average measured by the student-per-laptop ratio (OECD, 2015). While this great digital infrastructure may sound promising, previous research has revealed that the uptake of technology varies greatly by classroom and that how technology is used is largely dependent on individual teachers. Access to technology is not a reliable predictor of teachers' actual implementation of digital technology (Blikstad-Balas & Klette, 2020; Elstad, 2016; Gil-Flores et al., 2017). The fact that each teacher can decide to what degree and how they want to include digital technology in their lessons will lead to unequal opportunities to develop digital competence. Further, the latest Teaching and Learning International Survey (TALIS) report from Norway highlighted the discrepancy between merely providing access for students and preparing teachers to utilize the technology in their everyday teaching (Thronsen et al., 2019).

The few studies that have been published so far from Norway have shown that most teachers were able to continue providing instruction for their students. Drawing on a small-scale study following students, parents, and teachers in one municipality, Bubb and Jones (2020) suggested that teachers adapted rapidly, and that homeschooling was well received by students and their parents. Gudmundsdottir and Hathaway

(2020) found that, despite teachers' inexperience and unpreparedness for online teaching, they were moderately prepared to use various digital tools and willing to make online learning work for them and their students. In a national survey, teachers and school leaders reported very limited prior experience with remote teaching, but they also noted that they were able to teach their students from a distance and to maintain contact with students and parents during the period of homeschooling (Federici & Vika, 2020). At the same time, this national survey also showed that only 27% of teachers in primary and lower secondary school, and 23% of teachers in upper secondary school, confirmed that they were able to follow up with vulnerable students who needed special support during this period (Federici & Vika, 2020). There is concern internationally that there will be less learning for most students during the period of remote learning (Azevedo et al., 2020). One concrete manifestation of this issue in Norway is the significant drop in writing competence in the first grade, when comparing students who were remotely taught during the Pandemic with students from previous years. Preliminary findings have indicated that, even though the schools were closed for under two months, the estimated achievement loss for first-grade students in writing was equivalent to one and a half semesters (Skar, Graham, & Huebner, in review). Further, Mælan et al. (2021) survey on lower secondary school, found that it was harder for low-achieving students to maintain engagement and motivation during the period with home schooling compared to regular school. They also found that students experienced less support from their teachers, and summarize that there is reason to be concerned, especially for the low-achieving students, but also when it comes to the effects of home schooling in general and the impact it may have on all students (Mælan et al., 2021). In the following section, we will share analyses from a national survey where parents with children in grades 1–10 were invited to share their experiences with remote learning. Drawing from these experiences, we will discuss both the main challenges and some possible benefits of homeschooling.

## 7.4 Parents' Survey on Homeschooling

To shed light on the impact of the Pandemic on educational opportunities in Norway, we developed an anonymous, digital survey about homeschool and remote teaching for parents with students in primary and lower secondary schools. Due to the crucial timing, we distributed the survey to parents digitally; specifically, we wanted responses to reflect sentiment during the emerging and first period of homeschooling and school lockdown, not in retrospect.

We invited parents with students in grades 1–10 from all over Norway to respond to the survey. If the parents had several children in primary or lower secondary school, they chose one of their children prior to starting the survey and answered all questions for that child. The main ambition of the survey was to investigate all aspects of homeschooling, including what kind of remote teaching students were offered and how parents experienced the homeschooling situation. The survey included background

questions about the school location, the student's gender and grade, and the parent's level of education and work situation during the period (i.e., work outside home, home office, laid off/unemployed, and stay-at-home parent). After completing the background information, parents answered 24 questions directly related to the homeschool situation, such as digital equipment, attendance requirements, communication with teachers, tasks, subjects covered, students' engagement and efforts toward schoolwork, and the parent's own experience during the period of homeschooling.

Due to the time sensitivity, we opted for a non-probability convenience sample (Fowler, 2009) where we invited participation from invitations online, as with many other one-time internet surveys. We recruited parents through selected social media groups for parents on Facebook and Twitter. The teachers union and colleagues from other universities in the field of education also helped us distribute the survey through social media. As with any non-probability-based sample, the greatest limitations are the unknown relationship between the sample and the population and the missing theoretical basis for estimating the repetitiveness of the sample. To compensate for some of these uncertainties, we included several background variables about the respondents (e.g., where they lived and their educational background), which enabled us to systematically monitor these variables in our samples and compare them with nationally representative samples. In doing so, we were also able to evaluate responses as they came in to determine where we needed to put in extra effort to obtain more responses; for example, if too many parents from the capital area responded, we would systematically target parents in other areas.

The parent survey was answered by 4,642 parents from all over the country. A total of 262 of the country's 365 municipalities were represented with good geographical distribution including large and small towns as well as urban and rural areas. Furthermore, 52% of the respondents represented students at the primary school level (grades 1–4), 30% students at the intermediate level (grades 5–7), and 18% students at the lower secondary level (grades 8–10), indicating that parents of younger children were overrepresented in the sample. While 96% of all respondents had children in public schools, only 4% were in private schools, which is the same percentage as for the country (Statistics Norway [SSB], 2020). In terms of gender distribution, parents reported about 54% boys and 46% girls. As a measure of socioeconomic status, we asked parents about their highest level of education and compared their responses to the national average for parents between 25 and 50 years, which we assume represents most of the parents in our sample. Our sample had a higher percentage of parents with a master's degree or a Ph.D. and a lower percentage of parents with lower levels of education (Statistics Norway, 2020). Despite not being a national representative sample in terms of parents' educational background and distribution of grade groups, the data set we present here is, to the best of our knowledge, the most systematic and most comprehensive available to examine how parents with children in grades 1–10 experienced the period of homeschooling and what characterized the instruction their children took part in. The items we developed for this survey have also been included in later and ongoing national evaluations of the period of homeschooling.

In the following, we will present the main findings from the survey, with an emphasis on the impact of the Pandemic on educational opportunities for different

groups of students and what kind of learning students were engaging in during the period of homeschooling. We will also highlight what parents perceived as the most challenging and most rewarding aspects of remote teaching before we discuss the implications and potential lessons to be learned.

## 7.5 Analyses and Results

In the descriptive statistical analyses, we divided the students into the following three groups: grades 1–4, grades 5–7, and grades 8–10, to show how the educational opportunities between these groups varied. We believe that most parents answering this survey have good insight into what their child has been doing, particularly because 85.6% of the parents reported having been at home to a large degree during the period of homeschooling. This finding is consistent with the high number of respondents with higher education and jobs that typically can be done from the recommended home office.

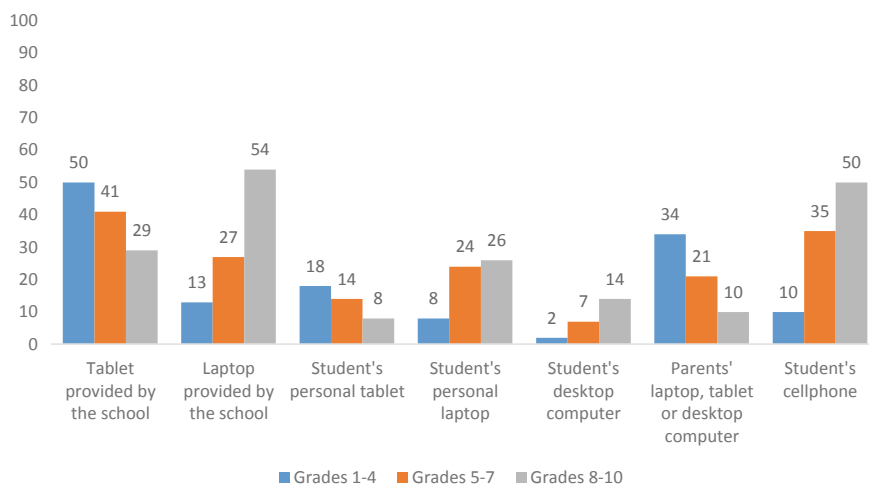
The open-ended questions in the survey were coded qualitatively using conventional content analyses (Hsieh & Shannon, 2005), where we identified and aggregated patterns in responses before selecting examples illustrating typical responses. Two of the authors coded all the open-ended questions simultaneously and checked for consistency in the coding during this process. Further, any borderline cases or responses that were difficult to code were discussed before deciding on final coding.

We will start the analyses by reporting the parents responses regarding what access to relevant technologies they had, what kinds of digital attendance schools expected students to show and how much contact students had with their teachers during the time of homeschooling. Then, we report on how parents and students experienced remote learning, before looking into how parents themselves describe the main challenges and benefits of homeschool education.

### *Access to equipment and prior knowledge about the schools' digital systems*

Access to equipment is a prerequisite for remote digital teaching, and we asked parents to report what equipment students used for homeschooling. Several answers were possible, and several parents reported up to three different devices. The results are summarized in Fig. 7.1.

Figure 7.1 reveals a tendency for younger students to use their parents' equipment, while older students were more likely to have their own more equipment. Only 63% of the parents with students in grades 1–4 reported using equipment provided by the school, but 83% of lower secondary students reported using the schools' equipment. Figure 7.1 also shows that half of the students in lower secondary school and a third of the students in grades 5–7 used a personal cellphone for schoolwork. While many chose to use equipment other than that provided by the school, hardly any parents complained about the quality of the equipment provided by the schools in the open-ended questions in the surveys. When asked if the equipment from school “worked



**Fig. 7.1** Percentage of parents who reported which types of digital equipment students used for schoolwork. Parents could give more than one answer

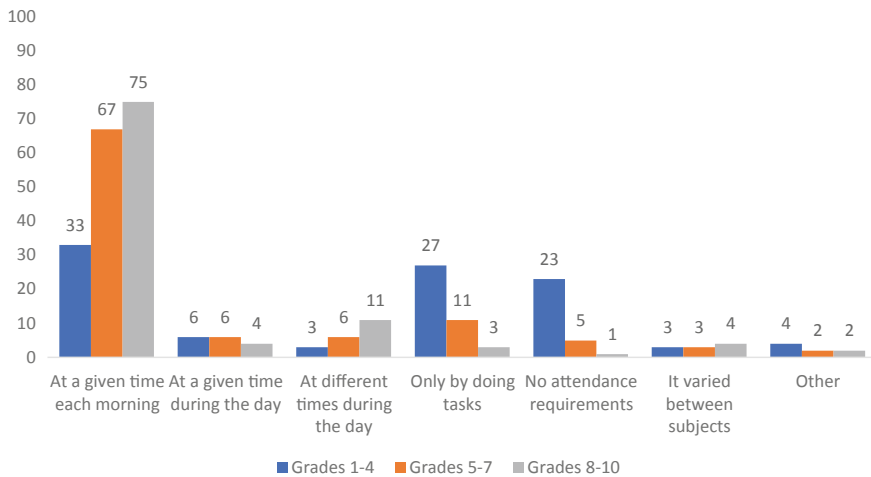
sufficiently well,” 96% of the 3171 parents who answered the question, confirmed that it did, while 4% answered no.

Parents were asked to list the main software used by the schools for managing remote teaching. We identified a clear trend that Microsoft Teams and Google Classrooms were used the most in lower secondary and in grades 5–7, while Showbie was the most used learning system for grades 1–4. When asked how familiar the students were with the schools’ chosen platform, only 48% of the parents reported that the platform was well known before the Pandemic. In contrast, 23% reported that it was known to some extent, while over a quarter of the parents (27%) reported that the students were not familiar with the platform, and 2% were not certain. Again, the tendency was that parents who had children in the lower grades reported the least prior knowledge on how to use the school’s platform.

#### *Attendance requirements and teaching practices*

An important pedagogical question is how teachers can follow up with their students to make sure they are participating when they are not physically present in the same room. When both students and teachers are in their own homes, the everyday contact in the classroom is replaced by other forms of contact, either by the teachers or the students themselves. We asked parents to report on what was expected of the students regarding attendance during a normal day of homeschooling.

As Fig. 7.2 shows, three-fourths of students in lower secondary school and two-thirds of students in grades 5–7 were asked to be present at a given time each morning. This finding is in stark contrast to the one third of students in grades 1–4 who had to be present in the morning. We can also see that 23% of the parents with students in grades 1–4 reported that their children were not expected to attend online classes

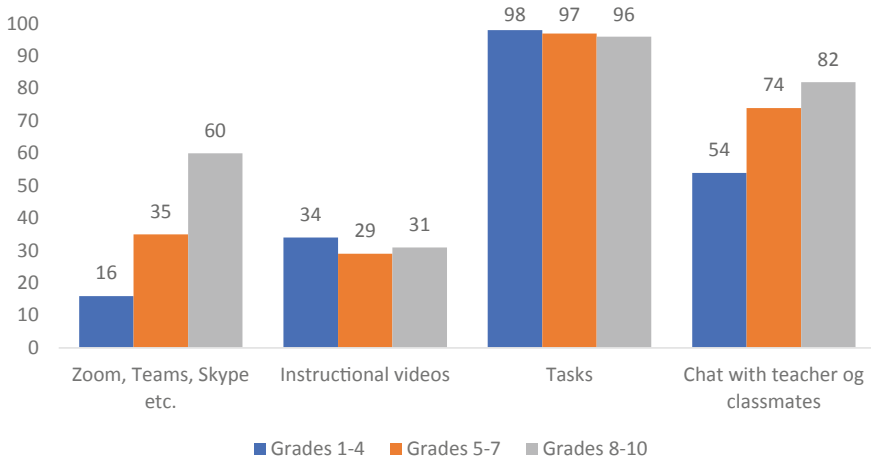


**Fig. 7.2** Percentage of parents who reported how students showed attendance during a normal day of homeschooling. Some response percentages may not add up to 100% due to rounding

at all. Further, 27% of the parents of children in grades 1–4 reported that all their child had to do to show that they were participating was to complete different tasks with a given deadline. In the open-ended questions, where parents could describe key challenges with homeschooling, this group expressed a particular concern regarding the amount of individual work that the parents had to follow up on.

The shift from classroom-based to remote teaching was expected to result in several new uses of digital tools. We asked parents to report on what kind of instructional practices their child would engage with on a typical day of homeschooling. As shown in Fig. 7.3, Real-time instruction through Zoom, Teams, Skype, etc. was more common with older students than their younger counterparts.

While 60% of parents with students in lower secondary school reported that this was typical instruction for homeschooling during the Pandemic, only 16% of the youngest children engaged in such instruction on a typical day. About a third of the parents across all grade levels reported that pre-recorded videos with the teacher were typical. Tasks from the teacher were by far the most characteristic aspect of homeschooling, as 96% (lower secondary school), 97% (grades 5–7), and 98% (grades 1–4) of parents reported that such tasks would be assigned on a normal day of homeschooling. The figure also shows how contact with the teacher and other students through chat increases with age. While 82% of the students in lower secondary school chatted with the teacher or with classmates, only half (54%) of the parents with students in the lowest grades reported the same. We also asked the parents what kind of learning their children had done most of during a typical day. We identified a clear tendency with little difference between the grade groups, as 95% of all parents reported that this would be individual work with tasks. Only 2% reported that collaborative tasks were the most common, 2% reported that the most



**Fig. 7.3** Percentage of parents who reported what instructional practices would happen on a typical day with homeschooling. (Parents could give more than one answer) Some response percentages may not add up to 100% due to rounding

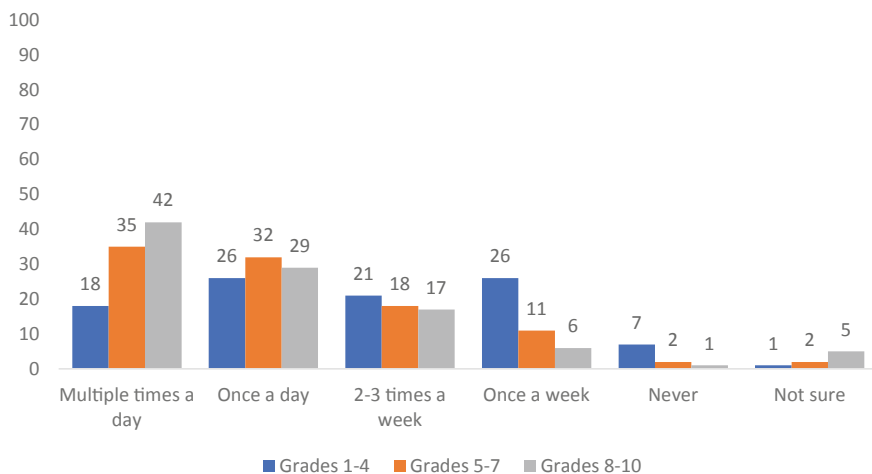
typical was instruction on Zoom, Skype, Teams, or similar software, and 1% said they did not know the most common form of teaching activity.

*Contact with teachers*

A crucial question when it comes to providing equal opportunities to learn for all students is teacher availability and engagement. We asked parents to report on how often students had contact with their teachers, specifying both written and oral contact—through chat on the school’s learning system, digital video meetings, SMS, or phone calls, for example. As summarized in Fig. 7.4, the responses revealed substantial variation across grade levels.

The responses to this question revealed quite striking differences. In general, the older the student, the more contact they had with their teacher. While most students in lower secondary school had daily contact with their teachers, either once a day (29%) or multiple times a day (42%), over half of the students in grades 1–4 had contact with their teacher 2–3 times a week or less. The fact that 7% of the parents with children in grades 1–4 reported no contact with teachers during the period of homeschooling is quite concerning. However, it should also be noted that, when parents were asked if they felt they could contact teachers during the homeschooling period, a clear majority of parents answered that they felt they could contact the school to a large degree (52%) or to some degree (33%). Some parents (12%) reported they could contact the school to a low degree, and finally 3% reported uncertainties about whether they could contact their child’s teacher.





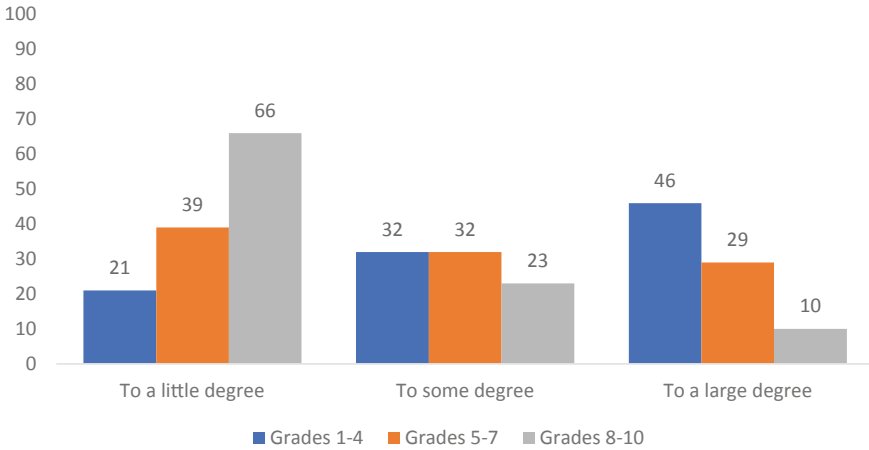
**Fig. 7.4** Percentage of parents who reported how often their child had contact, written or oral, with the school. Some response percentages may not add up to 100% due to rounding

### *How did students and parents experience homeschooling?*

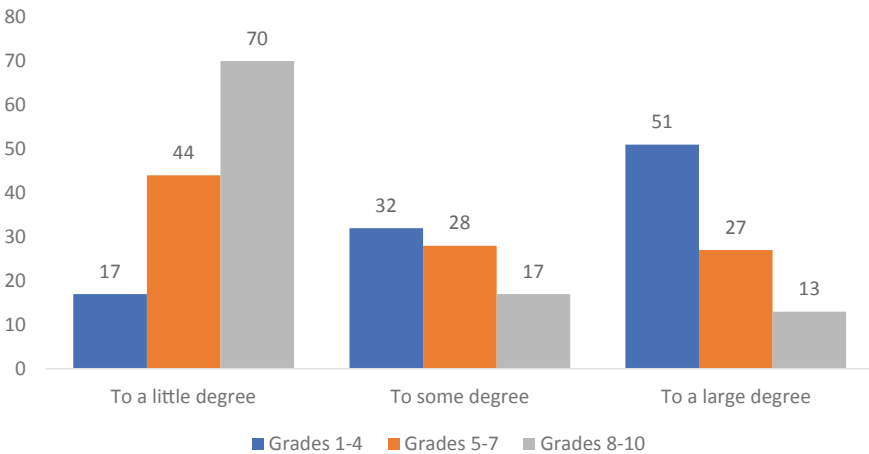
To learn more about how homeschooling was experienced compared to ordinary school, we asked parents to compare the two and rate the degree to which (*little, some, large, do not know*) they agreed with several claims. We asked them whether they had spent more time than they typically would on helping their child with schoolwork; whether following up with their child had harmed their own work performance; whether they had to monitor their child continuously to ensure progress; whether homeschooling had resulted in more insight about their child's education; and finally, whether it was understandable and clear what the school expected from the student. The tendency here was that the parents of the youngest children spent far more time following up with their children than parents in the lower secondary grades (7–10), as shown in Figs. 7.5, 7.6, and 7.7.

These questions illuminated differences between the grades, revealing that parents with younger children had been significantly more involved in monitoring their children's schoolwork. This finding implies that younger children with parents who were not able to follow up on their child's schoolwork were in a very vulnerable position, not only because other parents were helping their children but also because teachers monitored children in grades 1–4 the least during homeschooling (see Figs. 7.2 and 7.4). In one item, we asked parents to report on how much time they usually spent a day following up on their child's schoolwork, and the responses confirmed this tendency. As many as 85% of the parents with children in grades 1–4 reported spending 1–2 h or more on schoolwork a day, while this was the case for only 24% of parents with children in grades 8–10.

We also asked parents to report on how much their child engaged in schoolwork during the Pandemic compared to the duration of a normal school day. The parents

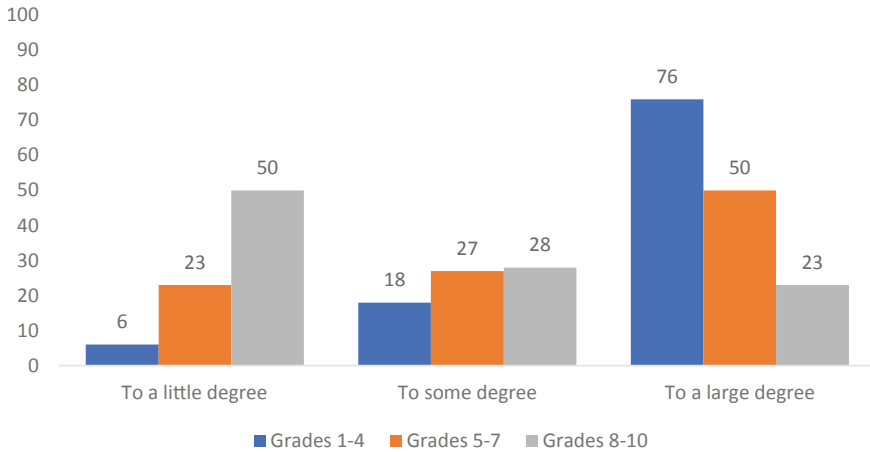


**Fig. 7.5** Percentage of parents who reported to what degree homeschooling had a negative impact on their own work performance. Some response percentages may not add up to 100% due to rounding

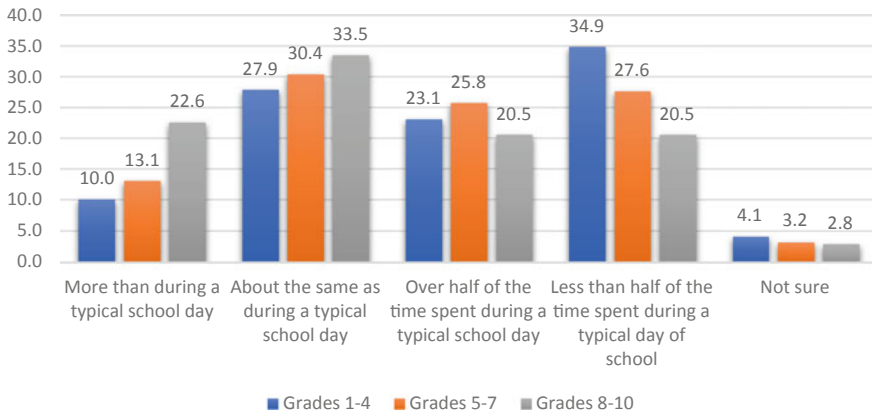


**Fig. 7.6** Percentage of parents who reported to what degree they had to monitor their student to ensure progress with the schoolwork. Some response percentages may not add up to 100% due to rounding

reported a clear tendency for students to work less compared to an ordinary school day. Overall, 31% of the parents reported that their child used less than half of the duration of a normal school day for school; 24% reported that students used more than half the time of a normal school day for schoolwork; 31% reported that students used around the same amount of time for school; and finally, 14% reported that students spent more time on school than the equivalent of a normal school day. Figure 7.8 breaks this information down into different grades to reveal trends.



**Fig. 7.7** Percentage of parents who reported to what extent they had spent more time than usual on following up with their child's schoolwork. Some response percentages may not add up to 100% due to rounding



**Fig. 7.8** Percentage of parents who reported how much time their children spent on homeschooling during the Pandemic compared to a normal day with traditional school

As shown in Fig. 7.8, most students in the lower grades (1–4) worked less than normal during homeschooling. For students in the lower secondary grades (8–10), the situation was quite different: most of these students spent about the same amount of time—or more—than they normally would on schoolwork. This finding can have multiple explanations, including that these students were monitored more closely by their teachers and that, unlike students in primary classrooms, they also received grades for their schoolwork during the Pandemic. Students in lower secondary

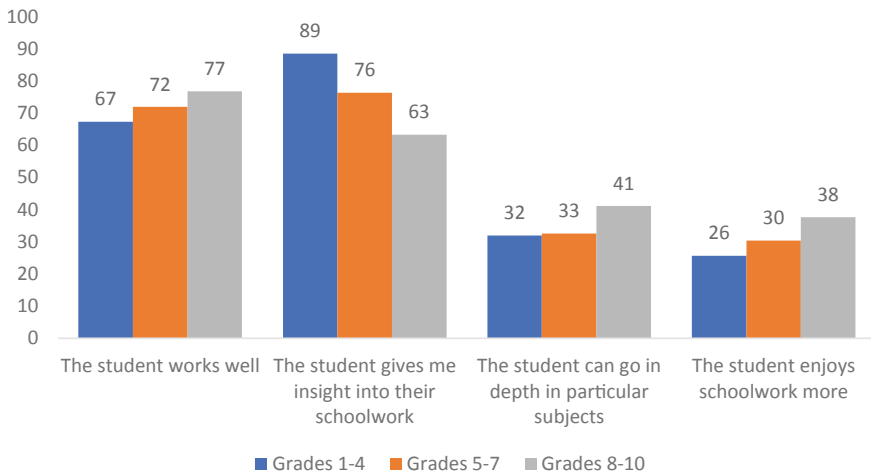
school are also more used to working individually and using digital tools for schoolwork, which may have allowed them to handle homeschooling better and more independently than their younger peers.

The findings that parents were more involved in following up with younger students, that teachers were less involved in following up with younger students, and that younger students spent the least amount of time on schoolwork during the Pandemic compared to ordinary schooling suggest that homeschooling has challenged some key ideas of Nordic schooling. They have challenged the notion that one’s school performance should not be dependent on one’s socioeconomic background, which we will discuss further in the final part of the chapter.

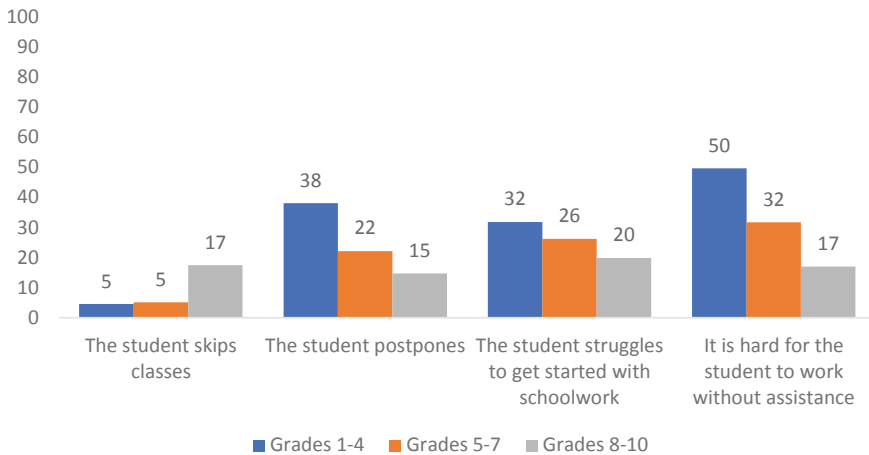
*How was the homeschool experience for the students?*

Parents were asked to assess how it was for their child to engage in the learning activities provided during homeschooling. Five statements described positive aspects and four statements described more challenging aspects. We used a 5-point scale with the response alternatives *always*, *often*, *sometimes*, *seldom*, and *never*, as well as the possibility to answer *I do not know*. In Fig. 7.9 we report the percentage of parents who answered *always* or *often* for each item describing positive aspects, and in Fig. 7.10 we report the percentage of parents who answered *always* or *often* for each item describing challenging aspects with homeschooling.

With the positive aspects reported in Fig. 7.9, parents with children in grades 1–4 reported that they have had the most insight into what their child was doing at school, as this response is very much in line with their answers to other items. Regarding the more challenging aspects of homeschooling and remote learning, we see again that except for skipping classes, the parents of younger children reported challenges to occur more often than the parents of the older students did. With a clear



**Fig. 7.9** Percentage of parents who answered “always” or “often” on positive statements about their child’s schoolwork



**Fig. 7.10** Percentage of parents who either answered “always” or “often” on negative statements about their child’s schoolwork

majority of parents at home, it is perhaps not surprising that very few of the youngest students skipped classes. 17% of parents of students in grades 8–10 reported that skipping class happened often or always. The parents of the younger children reported greater challenges with getting students to engage with schoolwork and being able to self-regulate their own schoolwork. The findings in Fig. 7.10 also indicate that homeschooling was more manageable for older students, who on average had fewer problems working individually with tasks.

A clear majority of the parents (81%) reported that their child missed ordinary school to a large degree or to some degree. While a few parents expressed in the open-ended questions that their child preferred homeschooling and learned more during this time, there were far more parents with open-ended responses who described that their child missed contact with classmates and that the lack of social contact due to homeschooling was very challenging. This finding is in line with Qvortrup (2020), who documented that Danish students missed the social aspects of teaching.

#### *Main challenges of homeschooling in the parents’ own words*

We identified some trends in the responses to the open-ended questions, but it should be noted that this part of the survey really shows how individual parents have experienced the Pandemic differently. On one end of the spectrum are parents who expressed that this time was extremely hard, that their child missed their friends and worried about older family members getting sick, and that the amount of fighting between parents had increased. At the other end of the spectrum are parents who referred to the Pandemic times at home as a “gift for the family” because they were close to each other every day while schoolwork was more successful than ever, and their child was happier and learning more than they ever did during normal schooling. As such, the trends we will report here are not descriptive for all participating parents; rather,

these trends express themes that were the most prominent in the parents' responses concerning both challenges and silver linings. We will start by reporting on issues many parents found challenging.

One open-ended question asked parents to explain in their own words what they experienced as challenging with the homeschool situation. Parents across grade levels often mentioned that it was difficult to combine their own work from home with helping children, as illustrated in the following examples of parents' responses:

The first grader needs to be monitored very closely, and that is not compatible with the degree of our independent work at our home office. Apart from the weekly plan with assignments that we received, there has been no teaching or direct contact between student and teacher. (Parent of a boy, 1st grade)

Even though I am not continuously helping, the homeschooling interrupts the home office so much that I am not able to do my job. (Parent of a girl, 2nd grade)

We are several people at home, three with homeschool and one or two in the home office. This is challenging when it comes to both noise and space. It is also challenging to be in a full-time job and at the same time be available for three students in homeschooling! (Parent of a girl, 8th grade)

The fact that many parents found home schooling so demanding also indicates how requiring students to learn from home seriously challenges equity ideals, as parents' ability to provide students with support varied. We know, for instance, that some parents had to prioritize their own work over their children's schooling, if, for example, they were small business owners trying to prevent their business from going bankrupt. The actual difference between home environment and support is evident in the open-ended answers, where some parents describe providing very close support that increased learning motivation and even student achievement according to the parents, while others describe how guilty they feel for not being able to follow up school as much as they would like. Closely related to the issue of combining one's own work with children's schooling, many responses indicated that it was time-consuming to follow up on the students' work. Many parents stated that it was demanding to take on the role of the teacher for their own child, who may not be willing to let them have that role. Two parents of third-grade students explained this situation below:

It has not always been easy to explain assignments because my son does not always want to listen to what I have to say. I'm not his teacher ... and I'm probably not suitable as a teacher either :-). (Parent of a boy, 3rd grade)

Parents neither know the current pedagogy nor the teacher's methods. Parents are NOT educators. (Parent of a girl, 3rd grade)

The clear trend in parent responses regarding challenging aspects of remote teaching was that homeschooling was time-consuming and demanded that parents follow the students' work carefully, especially with the younger grades. As in other studies (Bubb & Jones, 2020), several parents expressed increased admiration for teachers because they experienced firsthand how difficult it was to motivate students for all kinds of tasks. Regarding equity, it should also be noted that while we did not have a specific item in the survey about students with special needs, some parents

who did have such students described how these students were not being followed up, and that their school was failing to provide them with equal learning opportunities:

The assignments they get are not adapted to each student, for example special needs are not taken into account (Parent of a boy, 1st grade)

My child has dyslexia and is not given the adapted education she usually would get in school. It is demanding to help her when none of us at home are (special) educators. (Parent of a girl, 2nd grade)

My son is entitled to special need education – it is not being followed up (Parent of a boy, grade 8)

This is consistent with the research done by Federici and Vika (2020), who identified that only 27% of teachers in primary and lower secondary school and 23% of teachers in upper secondary school in Norway reported that they were able to follow up with vulnerable students who needed special support during the period of home schooling (Federici & Vika, 2020). This shows, again, that home schooling in Norway “outsourced” (to the parents) an explicit national educational principle during the Pandemic, namely that each student should have an adapted learning environment providing equal learning opportunities for all (The Norwegian Directorate of Education and Training, 2021b).

#### *Main benefits of homeschooling in the parents’ own words*

In the survey, we also included an open-ended question that asked parents to explain in their own words what they experienced as benefits with the homeschool situation. Most responses revolved around getting better insight into what a typical school day consists of and what is expected of the students in different subjects. The following is a typical example of answers highlighting the parents’ new insight into their child’s schoolwork:

We loved homeschool. We have had more time together, I have acquired greater insight into the schoolwork, we have talked more about the tasks they have been given, and we have reflected on the fact that it is important to practice several times to become good at something. For us, homeschooling has been golden and something we could continue to do for a long time. (Parent of a girl, 2nd grade)

Further, many parents agreed that the increased flexibility of when to do what and how to organize the school day was a welcome benefit. This response is in line with the OECD finding that homeschooling increased student autonomy and their ability to manage their own learning (Reimers & Schleicher, 2020), as illustrated by this parent response:

It is different. The student manages his own time better. He mostly finishes schoolwork during the normal hours of school and does not have to spend the afternoon doing homework. (Parent of a boy, 8th grade)

More family time was another benefit expressed by many parents across grade levels. This finding is connected to the increased flexibility that came with home-school, where parents were able to structure the school day (and their workday) as they wanted and spend more time together engaging in physical activities like skiing and hiking:

It was nice that there was some flexibility in relation to when the tasks had to be completed, so we had the opportunity to take a break in the middle of the day and go for longer cross-country skiing trips. (Parent of a girl, 2nd grade)

He has become more interested in physical activity, including running, strength training, and skiing with us. (Parent of a boy, 8th grade)

The student is very interested in the tasks and spends a lot of time on schoolwork, in addition to being able to exercise a lot every day (especially skiing). (Parent of a girl, 10th grade)

While these responses are positive, we also know that the best performing students during homeschool in Norway were those that were more physically active according to their parents (Roe et al., 2021). Again, we would like to underscore the variation in the material. While the responses indicated a trend of seeing flexibility for more family time, including time outdoors, as a benefit, parents also expressed their worries about screen time and lack of physical activity.

## 7.6 Discussion

A key aspect of the Nordic model is the idea that all students, irrespective of social, economic, and geographical background, should have the same educational opportunities (Klette, 2018). The Coronavirus Pandemic has the potential to aggravate social inequality, as all education has taken place in each student's own home (Azevedo et al., chapter 16; Doyle, 2020; Reimers, chapter 1). The survey data we have presented here suggests that this is very much the case in Norway, for several interrelated reasons that we would like to discuss further.

First, a key finding of our survey is significant variation in how much contact teachers had with their students and to what degree parents were assumed to be involved in the learning activities. While students in upper secondary school were expected to show up digitally in their classroom up to several times a day, many students in lower grades, especially the youngest students in grades 1–4, were not monitored in the same manner. In many ways, the youngest students are the most vulnerable ones, as they are often the least capable of administering their own learning and managing their own tasks. Paradoxically, these children had the least contact with their teachers and least frequently had real-time instruction through digital software like Zoom or Teams. Some students in the lower grades of primary school went weeks without contact with their teacher at a time when the official policy was to keep teaching full school days remotely. This expectation dramatically increases parental involvement in schooling, as found in other studies (Bubb & Jones, 2020). While many parents in our survey reported that they had spent a significant amount of time each day following up with their children's schoolwork, the basic idea of the Nordic school system is to avoid the implicit assumption that all children have access to qualified help at home, as we know that unfortunately such support is not universal.

As Krumsvik (2020) noted, it is important for educational researchers to investigate different aspects of the educational consequences of the Pandemic to avoid the



domination of anecdotal evidence about how the shutdown has affected students' lives. This is particularly important considering the World Health Organization's (WHO, 2020) prediction of more global pandemics in the future. We should therefore also ask if there are any didactical lessons to be learned here concerning the teaching practices that were the essence of homeschooling.

An important finding in our survey is that, while teachers in Norway have been expected to draw on digital tools across all school subjects and grades since 2006 (Erstad, 2006; Wieberg Klausen, 2020), this has not resulted in a shared digital repertoire of practices across, or even within, schools. Our survey shows some use of real-time instruction through digital platforms (more so in lower secondary grades than with younger students), but this was a limited part of homeschooling. The responses indicated that by far the most dominant educational activity was to let students complete tasks individually. This trend is significant if one is concerned with equity in education. Previous studies from Scandinavia indicate that individualized teaching methods, where students must decide themselves how and when to work, may put too much burden on the students (Dalland & Klette, 2014, 2016; Klette, 2018). Klette (2007, p. 352) argues, in an article about individualized teaching methods (such as the use of individual work plans with tasks to be done weekly), that this was particularly problematic for low achievers, who became responsible for "regulating their own failure at school". Individualized teaching methods will reinforce the individual background of the students, and by doing so produce fewer equal opportunities for all.

When schools opened again in May 2020, the Minister of Education explicitly underscored in a press release that the most vulnerable children had not been monitored well enough during the period when schools were closed (Ministry of Education and Research, 2020). She also expressed that the youngest students learned the least during homeschooling. In line with our survey data presented here, this raises questions about whether more could have been done to ensure access to high-quality instruction for all during the Pandemic. One could ask why there was not more use of collaborative tasks and virtual possibilities to connect students in a time when many missed their everyday social life at school. It should also be questioned why the youngest students had the least variation in how they were taught as well as the least use of digital technology that enables real-time interaction.

When we claim that the youngest students in many ways are the most vulnerable ones, it should not overshadow the fact that there are vulnerable students in all age groups. A student survey in Norwegian lower secondary school (grades 8–10) during the school closure by Mæland et al. (2021), found a tendency of lower efforts and self-efficacy among low achieving students, and the authors explicitly state that this trend may be difficult to reverse in reopened schools. A finding from our study that adds to this concern is that parents with children who have special needs describe that these needs have not been followed up during the Pandemic, and that they—the parents—are the ones who then must adapt the instruction and help as much as they can. This is reported by parents not only for the youngest children, but across grade groups. It is also consistent with other research on special needs education during the Pandemic (Federici & Vika, 2020).

There is limited research on the effect of the Pandemic on different groups of students, but Doyle (2020) emphasized that some evidence has suggested that school closures may have a greater impact on students with a lower socioeconomic background than their peers. Our survey shows some concerning trends, in particular that homeschooling was largely dependent on parental involvement. The great variety in how different schools practiced homeschooling, especially concerning attendance requirements and how closely and frequently teachers followed up on their students also raises both short-term and long-term concerns about the effects of homeschooling. As Doyle (2020) also underscored, some students will benefit from homeschooling if their parents can monitor them even better than a teacher could. In response to our open-ended questions, parents offered some descriptions that highlight this exact point: for some students, Pandemic homeschooling exceeded normal schooling in terms of both learning and motivation. However, the big question is what the long-term consequences are for all students, parents, and teachers who were not able to make the most out of the homeschool situation.

Sending each student to their own home to take part in remote learning for months will, for many, increase the impact of socioeconomic background on education. This is not surprising, but it makes it more important to really address the great variety of teaching students were offered during homeschool. As we see it, the most important take-home message from our research is that good digital equipment both at home and at school, as well as national curricula that highlights digital competence are not enough to ensure that all students are monitored as well as possible through remote teaching. As Soudien et al. (chapter 12) emphasize, the Pandemic has been an extremely challenging period for teachers. We have every reason to trust that Norwegian teachers did what they could in a very demanding situation, and there is evidence that school leaders and teachers were concerned about the most vulnerable students and that many local school leaders developed guidelines on how to support these students during the period of school closure (Federici & Vika, 2020). It is therefore of paramount importance to not blame individual teachers for the suffering of vulnerable students during the Pandemic, but to recognize that the Norwegian national response did not attempt to equalize opportunities to learn from remote teaching. Rather, the national response completely overlooked the inequalities in access to qualified help that already existed.

Our study also sheds light on the shared ambitions missing from remote teaching and the missing shared repertoire on ways to engage children in social, real-time interaction in a time that every child—and especially those in vulnerable situations—could benefit from interaction with their teachers and classmates. This is an important lesson for the future, not only because the amount of individual work in itself challenges equal opportunities, but because there are several studies indicating that students missed each other and the social arena that school is supposed to be during the period of closed schools (Bakken et al., 2020; Qvortrup, 2020).

## 7.7 Conclusion

In many ways, sending children to school is all about sending them away from their home environment to equalize their opportunities to learn—regardless of the opportunities and constraints they were born into. As Andreas Schleicher writes in his introduction to the OECD (2018, p. 3) report on equity in education, “what wise parents want for their children is what the government should want for all children”. Given that equity for all is such an explicit ambition of the Nordic welfare model, it is very concerning that the Norwegian Government’s response to the Pandemic did not offer any national guidance to support all students, and that teachers, parents and students were left alone to maintain the high expectations in the national curriculum as best they could—without any acknowledgement of the very unequal access to qualified help students had in their own homes.

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**Marte Blikstad-Balas** is a Professor at the University of Oslo, Department of Teacher Education and School Research. Her research interests are literacy and the use of texts across contexts, including how digital technologies change what it means to be literate in school. She has published her research on these issues in acknowledged high-impact journals such as *Reading Research Quarterly*, *Oxford Review of Education* and *Written Communication*. Blikstad-Balas is the newly appointed editor in chief of the *Nordic Journal of Literacy Research*. She is also Vice Director of the Nordic Centre of Excellence QUINT (Quality in Nordic Teaching) and teaches and supervises at the Master and PhD-level at the University of Oslo.

**Astrid Roe** is a senior researcher at the University of Oslo, Department of Teacher Education and School Research. She is an expert in the field of reading and has extensive experience with large-scale assessment like the PISA reading test as well as national reading tests in Norway. Roe has also been a part of the large-scale video study LISA (Linking Instruction and Student Achievement) where she has been responsible for analyzing the possible links between student achievement gains in reading from grade 8 and 9, how students perceive the quality of their teaching, and systematically scored video recordings from the same classrooms.

**Cecilie Pedersen Dalland** is an Associate Professor at Oslo Metropolitan Department of Primary and Secondary Teacher Education. Her research interests are in the areas of classroom research, individualised teaching, self-regulated learning, and gender issues. She has ten years of teaching experience in primary schools in Oslo. Dalland also has extensive experience in researching pedagogic practice at both school and classroom level. She is responsible for teaching and lecturing pedagogy for both bachelor and master students and is responsible for the Ph.D.-course Classroom Research. She is the head of the research group, Classroom Research and member of the research group, Studies of the Teaching Profession, Teacher Education and Education Policy (TEPEE). Dalland is currently a part of three research projects: IMAT, Implementation of strategies for adapted education, Welfare Access Through Technology (WATT) and a research project which focuses on the youngest students in school, the Evaluation of the six-year reform in Norway.

**Kirsti Klette** is a Professor at the University of Oslo, Department of Teacher Education and School Research. Klette is the Director of the Research group Studies of Instruction across Subjects and Competences (SISCO) at the Faculty of Educational Sciences, and she is the Director of the Nordic Centre of Excellence in Education Quality in Nordic Teaching (QUINT). Klette has received major grants for national and comparative studies in these areas of research. She is also the principal investigator of a large comparative cross-national study analyzing teacher training programs in Finland, Norway; California, Chile, and Cuba—the Coherence and Assignments in Teacher Education—CATE study.

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# Chapter 8

## The Portuguese Educational Policy to Ensure Equity in Learning in Times of Crises



Estela Costa, Mónica Baptista, and Carolina Carvalho

**Abstract** This study aims to analyze the Portuguese government policy pronouncements to face COVID-19 and to examine how the policy measures have been enacted and interpreted by teachers to ensure equity in learning. The study **is rooted on a cognitive approach to public policy, and grounds on the notion of the *référentiel***. A qualitative and interpretative methodology was used, based on the analysis of official and public documents prepared and made available during the confinement period (March to July 2020) on the Ministry of Education website. Also, interviews were conducted with 15 teachers from various Portuguese schools. Findings show that public authorities quickly responded using informative (e.g., websites to support schools, a TV program, YouTube channels) and communicational (e.g., Facebook, a platform for school principals, email to pose questions) tools. Moreover, the pandemic crisis put equity issues at the center of all concerns and led to the discussion around equity in education to become more pronounced. The differences between distance and in person learning have been made clear while vulnerable students were forced to stay at home, with little or no conditions to learn and without support for studying. We conclude that the general guiding principles behind the policy measures to combat the pandemic at the state and school level were based in a referential that incorporates the constitutional right of ‘school for all’, which is focused on schools’ educational role, while also assigning schools social and economic responsibilities.

### 8.1 Introduction

In Portugal, the population was suddenly surprised by the coronavirus in spring 2020. This planetary health crisis was to become a headache for public health authorities, and especially for policymakers, who had to quickly take the necessary political measures to mitigate the effects of the pandemic in various sectors.

In education, these policy responses have been associated with issues of social justice and equity. In fact, the complexity of the reality associated with the pandemic

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E. Costa (✉) · M. Baptista · C. Carvalho  
Institute of Education, University of Lisbon (IE-ULisboa), Lisbon, Portugal  
e-mail: [ecosta@ie.ulisboa.pt](mailto:ecosta@ie.ulisboa.pt)

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in the education sector has highlighted the urgent need to find answers for the full realization of the Sustainable Development Goals (UNESCO, 2015) and the 2030 Agenda (*idem*), whereas equity is placed at the center of international development. In these high-level policy documents, it is strongly recommended that all member states ensure inclusive and equitable education for all, including children and young people in vulnerable situations and at risk of exclusion from education.

In Portugal, as in many other countries, children who face the greatest educational inequalities live in families most exposed to conditions of greatest risk of social exclusion (CNE, 2019), and these are also those most exposed to the social and economic consequences of the pandemic. When most countries decided to temporarily close schools, and switch to distance education, as a way of reducing the impact of the pandemic, equity in education has become a major concern. The proliferation of distance learning is a worrying situation for students from disadvantaged socio-economic backgrounds, who are forced to stay at home in vulnerable contexts uncondusive to learning without the appropriate support.

This chapter is in line with empirical research (e.g., Ahmed et al., 2020; Álvarez et al., 2020; Holguín & Sandoval, 2020) that aimed to identify the actions implemented by governments all over the world, and to analyze the implications for ensuring the equity of student learning.

This prompts the following research question: How equitable was student learning in the Portuguese context during the COVID-19 pandemic from March to July 2020? To answer the question, two main objectives were defined: (i) to analyze the policy measures adopted by the Portuguese government to face COVID-19; (ii) to examine how the policy measures have been enacted and interpreted by teachers to ensure equity in learning.

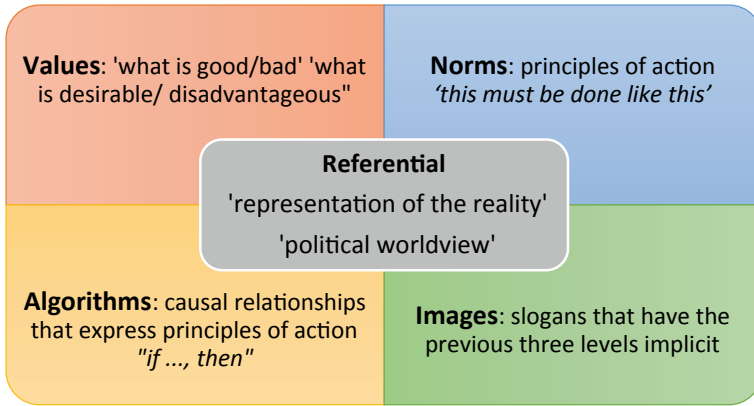
This qualitative and interpretative study was based on the analysis of official and public documents prepared and made available during the confinement period (March to July 2020) on the Ministry of Education website, and on the analysis of interviews conducted with teachers from various Portuguese schools.

This study has been developed within the scope of a cognitive and normative approach that emphasizes the importance of values and ideas in policy making (Surel, 2019), and is based on an understanding of public policies as courses of action directed at a specific area of society/territory on the part of an authority invested with public power and government legitimacy (Thoenig, 2019).

Public policy influences various sectors (education, justice, etc.) by adapting and/or transforming them. According to the cognitive approach of policies, this action on society by the government is based on ideas and values that those actors involved in the fabrication and reception of policies carry with them (Muller, 2018). In this sense, cognition and norms are very relevant to the study of policies. First, because actors only can intervene when they have an ‘idea’ about what to expect when they act (cause-effect relationship); second, because “norms and values are what motivate actors, telling them what they should and what they should not do” to solve the problems (Braun & Capano, 2010, p. 3).

To investigate the educational policies adopted during the pandemic and enacted by the school actors, within the scope of the cognitive approach of policies, we





**Fig. 8.1** A visual representation of a version Muller’s *référentiel* prepared by the authors

used the notion of *référentiel* (referential) as defined by Bruno Jobert and Pierre Muller (Jobert & Muller, 1987). When a policy is produced, it involves creating a representation that we build of the reality on which we want to intervene. We call this representation a “policy referential”, which once received and interpreted by the social actors, should consider the problems of the policy, and look for solutions to define how to act (Muller, 2018). As can be seen in Fig. 8.1, the referential is based on four levels of perception: values, norms, algorithms, and the images (Muller, 2018).

Values are representations about what is good and bad, what should be desirable or disadvantageous (e.g., the debate between equity vs. equality); norms express the gaps between what is observed and what is desirable. Above all, they define principles of action: ‘this must be done like this’ (e.g., “agriculture must be modernized”); algorithms define causal relationships that indicate the principles of action, i.e., they reveal a theory of action and can be expressed in the form of “if ..., then” statements (e.g. “If I transfer the policies to combat social exclusion from the State to local entities, then public policies will be more effective because they are closer to the stakeholders”); finally, images can be presented in the form of slogans that have the previous three levels implicit. They are short phrases with strong cognitive appeal that give meaning immediately, without the need for a long speech (e.g., “the dynamic and modern young farmer”) (Muller, 2018).

Therefore, the notion of referential is a matrix that we have used to analyze the policy measures that were designed by public authorities to solve a specific problem in education: the constraints imposed in education by COVID-19. Thus, it helped us to understand how issues of equity and combating inequalities were considered in policy measures and how teachers have interpreted those measures. In this work, the deductive method was used to define the categories of data analysis, adopting the first three levels of perception proposed by the author.

This chapter comprises four parts. The first part of the paper includes a brief account of the Portuguese educational context, the policy measures implemented to face the pandemic, and the research strategy. The second and third parts present the

results of the study, comprising the policy measures adopted by the State authorities to face COVID-19 and the perceptions that teachers have regarding the policies. The chapter closes with a summary of the key findings.

## 8.2 The Portuguese Education Context

In recent years, Portuguese schools have acquired more decision-making autonomy over the curriculum, and in the administration of schools, through policies of curricular flexibility and the signing of autonomy agreements. However, despite the recent increase in involvement of local partners, the educational system still is highly centralized: “The Ministry of Education is responsible for defining the curriculum, guidelines for national examinations (...), teacher recruitment and deployment, and the budget at pre-primary, compulsory, and higher education levels” (OECD, 2014, p. 15).

In particular, the Portuguese education system is organized in three sequential levels: early childhood education and care, basic, and secondary education. As other OECD countries, children enter in school through kindergarten and pre-school education is offered for children between the ages of 3 and 5. Compulsory education typically starts at the age of 6, when children enroll in basic schools. Basic compulsory education is organized in three study cycles of varying lengths: 1st cycle (1st–4th grades), 2nd cycle (5th–6th grades), 3rd cycle (7th–9th grades) and secondary education, which is organized in both general and vocational education pathways. In the general track, students select one of four curricular areas: science and technologies, social and economic sciences, languages and humanities, or visual arts. Formal schooling in Portugal is compulsory for students until 18 years old or until the completion of upper secondary if students complete their studies before the age of 18 (Liebowitz et al., 2018).

## 8.3 Policy Measures to Face the COVID-19 Pandemic

In Portugal, during the third school term in spring 2020, the coronavirus pandemic came about and caught public authorities off guard, forcing civil society and policy-makers to join efforts to address the crisis. In addition to legislation, different policy measures and instruments were taken, which emanated from public authorities to help schools to cope with the effects of the pandemic (Table 8.1).

The measures to be taken in education increased gradually until the pandemic reached its peak alongside the decision to confine the entire population, through a Communiqué of the Council of Ministers of March 19, 2020.<sup>3</sup> The confinement started on March 22, shortly after school attendance has been suspended, on March

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<sup>3</sup><https://www.portugal.gov.pt/pt/gc22/governo/comunicado-de-conselho-de-ministros?i=334>.

**Table 8.1** Description of the policy measures and instruments

Policy measures/instruments	Description
“Apoio às Escolas” [Supporting schools] <sup>1</sup>	A website called “Apoio às Escolas” was made available by the Ministry of Education (ME) throughout the Directorate-General for Education (DGE), in collaboration with the National Agency for Qualification and Vocational Education (ANQEP). It comprised information about exams, and guidelines to use digital platforms, and information about distance assessment and included a functionality that made it possible for teachers to share practices with other teachers
Guiding principles for the implementation of distance learning <sup>2</sup>	A script had been distributed to schools by DGE, with 8 guiding principles for the implementation of distance learning (E@D) in schools
Technological roadmaps	Technological roadmaps were disseminated to support the implementation of platforms associated with Microsoft and Google, aligned with the guiding roadmap for the implementation of E@D was released by the ME
Distance learning plan	The establishment of exceptional and temporary measures to respond to the Covid-19 pandemic were established by the Decree-Law no. 14-G/2020, of 13 April, including the Distance Learning Plan (DLP) that emerged as the schools’ strategic instrument to organize schools’ educational efforts during this time period
Facebook page	The creation of a Facebook page ( <a href="https://www.facebook.com/Apoio-Escolas-104000431233940/">https://www.facebook.com/Apoio-Escolas-104000431233940/</a> ) for consultation and sharing of documents by schools
Inclusive education in the E@D	Dissemination of guidelines to schools for the work of multidisciplinary support teams for inclusive education in the E@D modality
YouTube	The Ministry of Education has established a partnership with YouTube that allowed classes to be made available for students from pre-school to secondary education, in five new YouTube channels

(continued)

<sup>1</sup> <https://apoioescolas.dge.mec.pt/>.<sup>2</sup> [https://www.dge.mec.pt/sites/default/files/roteiro\\_ead\\_vfinal.pdf](https://www.dge.mec.pt/sites/default/files/roteiro_ead_vfinal.pdf).

**Table 8.1** (continued)

Policy measures/instruments	Description
Webinars	The Ministry of Education promoted a set of webinars to support teachers in achieving success in their distance classes, through the sharing of different digital tools that can be used for teaching and learning
#EstudoEmCasa [#Studying at home]	The Ministry of Education and the Rádio Televisão Portuguesa (RTP) (the state television channel), with the support of the Calouste Gulbenkian Foundation, made available since April 20th a television program—#EstudoEmCasa [#Studying at home]—covering educational content through daily television classes. It was broadcast until the end of the school year from 9:00 am to 5:50 pm, with relevant content for consolidation and development of students learning systematized for different school years. The program was structured in thematic blocks, consisting of 30-min sessions, and was developed by teams of teachers from eight schools in the country, who made themselves available to develop this activity in addition to their regular work in their schools. Each block was inserted in a sequential planning, but could be used independently, comprising also moments of systematization, and containing varied instruments and resources and diversified methodological proposals
Support Brigade “We are on with schools”	The creation of a “Support Brigade” called “We are on with schools” to support the design and implementation of schools DLPs. They were composed of a multidisciplinary team of more than a hundred teachers linked to curriculum management and autonomy, ambassadors for E-twinning and learning laboratories, ambassadors for the aesthetic and artistic education program, and inter-municipal coordinators of the school library network
Partnership with the Portugal Post Office and the National Scouts	Arrangement with the Portugal Post Office (CTT) and the National Scouts to send vulnerable students work documents and proposals from schools

16, and just before the end of the 2nd term. Schools remained closed until the end of the school year, in what appeared as a peaceful and unanimous decision in Portugal.<sup>4</sup>

In fact, an online questionnaire sent to 1,754 parents showed that 92.5% of the Portuguese agreed with the government's decision (Benavente et al., 2020). Moreover, the rate of student participation has always been regular right from the beginning of school closures (between 76 and 100%), with secondary education showing higher values, certainly due to a greater autonomy of secondary students and because there is a greater availability of digital media at this level of education (ME/DGEEC, 2020).

## 8.4 Methodological Approach

### Research strategy

In this study, we followed a qualitative research methodology, based on an interpretive approach (Cohen et al., 2007), to examine how the equity of students' learning was ensured in the Portuguese context during the pandemic from March to July 2020. The data collection instruments used were written documents and interviews.

Written documents available online have made it possible to respond to the first research objective: to analyze the policy measures adopted by the Portuguese government to face COVID-19. Through the institutional websites, the internet has been a government instrument, and a way to communicate with students and families.

The collection totaled 17 documents, considering the following criteria: all documents referred to the period between March and July 2020, were integrated in the pages of official websites, were written by public authorities during the pandemic period, and were available on institutional portals (government, educational administration). The collection also consisted of official reports, legislation, communications.

The interviews aimed to examine the second research objective, about the perceptions of teachers on how they interpreted the policy pronouncements to ensure equity in learning. The interviews have been prepared based on Mainardes (2006) interpretation of Stephan Ball's work, to capture how school actors have interpreted the policies enacted by state authorities and perceived their effects on students learning. Therefore, the interviews have been constructed to discern school actors' perceptions about policy measures and especially their effects on vulnerable students. Fifteen teachers aged between 38 and 61 were interviewed. They were selected taking into account the following criteria: (1) they are part of the RedeEscola (SchoolNetwork<sup>5</sup>) of I E-ULisbon and therefore were working on projects coordinated by the first or second authors of this chapter; (2) they teach in diverse schools from different regions of the country (North, Center, Lisbon and Tagus Valley and Alentejo); (3) they teach various disciplines and teaching cycles (from primary and secondary education).

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<sup>4</sup>Only early childhood education establishments had reopened (on June 1st), and part of secondary (on May 18th), for students with exams to access Higher Education.

<sup>5</sup><http://redescola.ie.ulisboa.pt/>.

**Table 8.2** Categories and subcategories of analysis

Category	Subcategory
Values	Right to education
	School autonomy
Norms	Social support
	Teaching at distance
Algorithms	Technological education responses
	Protective social responses

For the analysis of documents and interview transcripts, the deductive method was employed, using three categories of Muller’s referential: values, norms, and algorithms (Muller, 2018). More specifically, the documents and transcripts were read and then the targeted text was segmented to represent an idea related with the three categories. Each segment was assigned a code and assigned a pre-defined category, according to its features. The first two researchers independently analyzed data, considering the categories of Muller’s model, comparing their analyses with each other to achieve inter-rater reliability. Each difference in text coding decisions were discussed until a consensus was reached. After this, based on the defined categories, interpretive codes and two subcategories have emerged for each category (Table 8.2).

#### Policy measures adopted by public authorities to face COVID-19

In this section the text is organized around the pre-defined categories and the subcategories that resulted from the text analysis.

#### Values

##### *Right to education*

The right to education as a principle of social justice underlies the measures taken by the government with regards to education in the context of the pandemic. In the various official texts, we found a conception of school as an entity that should guarantee rights and equity. Therefore, in April 2020, the presidency of the Council of Ministers launched exceptional and temporary measures under the imperative of “the continuity of the 2019/2020 academic year, in a fair, equitable and as a normalized manner as possible” (Portugal, 2020—Decree-Law n.º 14-G/2020, 13 April),<sup>6</sup> which were related to aspects of continued learning, including the assessment of students’ learning and the school calendar.

Likewise, *#EstudoEmCasa* has been launched with the associated message of the Assistant Secretary of State and Education (ASSE) reinforcing that: “Now the isolation is much stronger for the most vulnerable and it is again the time to put ourselves in the other’s place and ask ourselves the question ‘What if it were me?’”.

<sup>6</sup><https://dre.pt/application/conteudo/131393158>.

Furthermore, *#EstudoEmCasa* has been presented as an intervention “for students who do not have the facility or possibility to access the internet and the resources available there. Therefore, although available through cable, RTP Play, and the application *#EstudoEmCasa*, transmission via the RTP Memory channel ensures that everyone with a television can access these resources”.<sup>7</sup>

Students in this vulnerable situation have been identified in more than a third of schools (38% of schools with 1st cycle and 2nd cycle; 36% of schools with 3rd cycle). Most schools that reported students receiving educational content solely through *#EstudoEmCasa* had complemented it with other strategies to involve students in the teaching, learning, and assessment processes. These strategies were primarily based on the proposal of activities to be carried out by the students while maintaining a regular contact with the teacher-mentor and supported by monitoring by the Multi-disciplinary Support Team for Inclusive Education. A smaller number of schools opted for other strategies, including regular contact with the students’ classes.

Simultaneously, the Portugal Post Office and the National Scouts sent work documents and proposals from schools to students and facilitated the return of these materials to teachers. Similarly, other initiatives have been set in motion locally.

After students were identified by schools, their families were directly contacted. Moreover, when students still did not have access to the internet, postal service workers, volunteers, teachers, and school staff, in an articulated collaboration between municipalities, schools, and parents’ associations, took the teaching materials to families (transporting materials between students and teachers). Municipalities and various stakeholders have also been highly committed to providing families with tablets and computers (targeting, for example, families with many children, so that more children could simultaneously access the internet).

For disadvantaged students who had not received tablets or laptops from municipalities, donations from individuals and local partners helped fill this digital access gap. Moreover, several school partners (e.g., local institutions, social support institutions, foundations, global non-governmental organizations, etc.) and schools’ libraries were utilized by students on a rotating basis.

### *School autonomy*

As we have seen above, the responsibility of coping with the pandemic has not been entirely state centered. It has been shared with schools, which have been responsible for taking decisions and adapting policy action to their local realities. Accordingly, as they faced the suspension of face-to-face teaching, the government, through a Decree-Law,<sup>8</sup> encouraged the use of methodologies that schools considered the most appropriate, according to the guidelines of the Ministry of Education (ME). There was a concerted effort by schools to adapt to the new constraints: the most used resources were the physical and virtual manuals, followed by the proposals of online publishers, the resources shared on the internet, and those built individually. These resources were built collectively by schools, started in the order of 50% (in March)

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<sup>7</sup><https://estudoemcasa.dge.mec.pt/2019-2020/>.

<sup>8</sup><https://dre.pt/application/conteudo/131393158>.

and increased to 70% in June (ME/DGEEC, 2020). Therefore, decision-making about pedagogical strategies to face COVID-19 have increasingly been centered on schools that developed different strategies based on their contextual idiosyncrasies.

Likewise, *#EstudoEmCasa* has been portrayed as “a complement and as a support resource intended primarily for students without connectivity and/or equipment, regardless of other uses that might be made by teachers, through their inclusion in the E@D plans of each education establishment” (site *#EstudoEmCasa*).<sup>9</sup> It was then conceived as a complement and a resource that has been made available to teachers and students, as stressed in the document “9 Guiding Principles for Follow-up of Students using *#EstudoEmCasa*”.<sup>10</sup> One important concern has been to maintain the link between students and teachers to reduce any pernicious effects caused by physical distance:

*#EstudoEmCasa* it is not the replacement of the school. This is a school that is close by, always in articulation with the one that currently has their doors closed, but whose professionals are “in line” to bridge the distances.<sup>11</sup>

Accordingly, schools always received, in advance, the schedule grid, the contents of each educational block, and support materials and proposals for activities to be developed.

## Norms

### *Social support*

The communication<sup>12</sup> that has been sent to schools to inform that face-to-face classes would be suspended, instructed schools to support students educationally and socially. Although closed, schools have had a duty to provide school meals to students supported by social services: “each school, together with the municipalities and other providers, should find the most effective and safest way to ensure the meals”.

This indication has been reinforced with the publication of the Decree-Law n.º 10-A/2020<sup>13</sup> that stipulated that schools should adopt “the necessary measures for the provision of food support to students benefiting from (...) school social action”, as well as, whenever necessary, “to students from specialized units that have been integrated into learning support centers and whose permanence in school is considered indispensable.” (artº 9º).

In these official texts there is a conception of schools and their professionals as those who have been assigned social and economic responsibilities, such as ensuring ‘essential services in combating the pandemic’, and creating in the network of public schools childcare services for essential service workers (Ordinance No. 82/2020, of

<sup>9</sup><https://estudoemcasa.dge.mec.pt/>.

<sup>10</sup><https://apoioescolas.dge.mec.pt/sites/default/files/2020-04/Escolas%23EstudoEmCasa.pdf>.

<sup>11</sup><https://estudoemcasa.dge.mec.pt/2019-2020/>.

<sup>12</sup><https://www.portugal.gov.pt/pt/gc22/governo/comunicado-de-conselho-de-ministros?i=397>.

<sup>13</sup><https://dre.pt/application/conteudo/130243053>.



March 19)<sup>14</sup> (e.g. health professionals, security and rescue forces and services, fire-fighters, armed forces, professionals in the management and maintenance of essential infrastructures, municipalities) (artº 10º, nº 1, 2). Thus, it can be read in the ordinance:

It is important that the professionals of the services identified in the present ordinance, mobilized for the face-to-face service in this phase of exceptionality and emergency triggered by the SARS-CoV-2 epidemic, can have a welcoming place for their children or other dependents, in the absence of alternative solutions

Therefore, in each municipality, at least one educational establishment has been identified to welcome children of essential service workers.<sup>15</sup> Based on the need for society to keep on working and to “guarantee the readiness of all essential services to the fulfilment of citizens’ rights, freedoms and guarantees” (Ordinance No. 82/2020, of March 19),<sup>16</sup> school actors have been called upon to help to provide access to services in schools for extrinsic purposes of a labor and socio-economic nature.

### *Teaching at distance*

Decree-Law no. 14-G/2020, of 13 April, stipulated the need for each school to “define and implement a distance learning plan, with the appropriate methodologies for the available resources and evaluation criteria, which take into account the contexts of students” (art. 2, point 2).<sup>17</sup> The plan has turned out to be the main strategic instrument of schools to organize their educational work during the period of suspension of classroom activities. To this end, the ministry’s website “*Apoio às escolas*” has been created to offer “a set of resources to support schools in the use of distance learning methodologies that allow them to continue the teaching and learning processes”.<sup>18</sup>

Likewise, schools have been provided access to Microsoft Teams and Zoom platforms, which were free to use through institutional emails. Microsoft Teams was offered free to students as part of Office 365, providing a space for tasks, videos, and proposals, and more recently for the students’ assessment (feedback space). The Zoom platform was also widely used to provide remote meetings and classes while allowing the sharing of documents and involving many students in a synchronous interaction.

To support schools in the context of inclusive education, public authorities also have produced the document ‘Guidelines for the work of Multidisciplinary Support Teams for Inclusive Education in the form of E@D’.<sup>19</sup> Additionally, the ‘Guidelines

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<sup>14</sup><https://dre.pt/application/conteudo/130835147>.

<sup>15</sup>[https://www.dgeste.mec.pt/index.php/destaque\\_1/escolas-de-referencia-para-o-servico-de-ref-eicoes-e-acolhimento-de-filhos-do-pessoal-hospitalar-e-de-emergencia/](https://www.dgeste.mec.pt/index.php/destaque_1/escolas-de-referencia-para-o-servico-de-ref-eicoes-e-acolhimento-de-filhos-do-pessoal-hospitalar-e-de-emergencia/).

<sup>16</sup><https://dre.pt/application/conteudo/130835147>.

<sup>17</sup><https://dre.pt/application/conteudo/131393158>.

<sup>18</sup><https://apoioescolas.dge.mec.pt/>.

<sup>19</sup>[https://apoioescolas.dge.mec.pt/sites/default/files/2020-04/Orienta%C3%A7%C3%B5es\\_para\\_o\\_trabalho\\_das\\_Equipas\\_Multidisciplinares\\_de\\_Apoio%C3%A0Educa%C3%A7%C3%A3o\\_Inclusiva\\_na\\_modalidade\\_E@D.pdf](https://apoioescolas.dge.mec.pt/sites/default/files/2020-04/Orienta%C3%A7%C3%B5es_para_o_trabalho_das_Equipas_Multidisciplinares_de_Apoio%C3%A0Educa%C3%A7%C3%A3o_Inclusiva_na_modalidade_E@D.pdf).

for the Bilingual Teaching of Deaf Students in the E@D modality'<sup>20</sup> were written to promote the production of materials that could be made available on a school support website.

Throughout this period, the preference for distance support prevailed. All schools have a 'Learning Support Center' (LSC), which is an organizational structure to support inclusion. During this period, in addition to on-site support for students for whom this need was expressed, in most schools LSC supported students at a distance, using adapted methodologies to meet the goals of inclusive education (ME/DGEEC, 2020). A different structure is the 'Resource Centers for Inclusion' (CRI), which are specialized services existing in the community, accredited by the ME, which supports and enhances a school's ability to promote the educational success of all students. In June, the tendency to coordinate with the CRIs was reinforced, which reveals a greater awareness of the impact of the interruption of support and therapies on student learning (idem).

Moreover, regarding *#EstudoEmCasa*, an electronic site<sup>21</sup> associated with the TV program was created by the ME. This site provided content for each grade level, and each subject under analysis on TV were permanently made available, in addition to working proposals to complement teachers work. An e-mail address ([estudemcasa@dge.mec.pt](mailto:estudemcasa@dge.mec.pt)) was also created to clarify pedagogical issues related to the TV program *#EstudoEmCasa*.

## Algorithms

### *Technological educational responses*

The need to physically keep people distant from one another has led to a policy response facilitated through technologies. It is assumed that if remote education was adopted, the infection would be mitigated, as referred to in the Decree-Law n. ° 10-A/2020, March 13th (art.º 9º)<sup>22</sup> emanated from the presidency of the Council of Ministers. This causal relationship expresses the norms (principles of action) of this measure and favors technological responses to fulfil what has been "declared by the World Health Organization, on January 30, 2020, as well as the classification of the virus as a pandemic, on March 11, 2020, it is important to strategically protect contingency rules for the SARS-CoV-2 epidemic" (Decree-Law n. ° 10-A/2020, March 13th). Therefore, the rationale behind the policy was that if those measures were implemented and face-to-face classes suspended it would become a strong contribution to safeguard people's health. As a result, forms of remote education were implemented, using diversified means of digital communication, as well as the public television.

Therefore, public authorities made an effort to provide teachers with technological responses that made it possible to work with students remotely. Digital solutions have offered resources and strategies, new infrastructures for schools to use, and means

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<sup>20</sup>[https://www.dge.mec.pt/sites/default/files/guia\\_de\\_boas\\_praticas\\_de\\_ensino\\_online\\_em\\_contexto\\_de\\_emergencia\\_para\\_alunos\\_surdos\\_durante\\_a\\_pandemia\\_da\\_doenca\\_covid\\_19.pdf](https://www.dge.mec.pt/sites/default/files/guia_de_boas_praticas_de_ensino_online_em_contexto_de_emergencia_para_alunos_surdos_durante_a_pandemia_da_doenca_covid_19.pdf).

<sup>21</sup><https://www.rtp.pt/play/estudoemcasa/direto/estudo-em-casa>.

<sup>22</sup><https://dre.pt/application/conteudo/130243053>.

of accessing useful information through the Facebook page, where schools could consult information and share documents and work strategies with students<sup>23</sup> in addition to a YouTube channel<sup>24</sup> for sharing classes and educational initiatives.

### *Protective social responses*

Some of the policy measures did respond more sharply to this causal association between the actions and the expected result. In the case of *#EstudoemCasa*, there has been an appeal of the Assistant Secretary of State and Education (ASSE) to fulfil the goal of combating inequalities:

Broadcasting on television is not enough, because these contents do not guarantee learning by themselves. They can be used by everyone, but they are not enough. They are themes and work proposals, which only guarantee learning if students are accompanied and guided by the possible ways, with the necessary partnerships.<sup>25</sup>

In this regard, the ASSE added it would encourage the mobilization of all school actors to combat inequalities, “to be able to be close to those who are further away during confinement.” In his speech, ASSE establishes a causal relationship, and links *#EstudoemCasa* to ways of working that call for alignment and cooperation between teachers.

This is a time for collaboration and cooperation. And it is a moment of praise for all teachers who, in all our schools, feel themselves to reinvent themselves so as not to leave any students behind.<sup>26</sup>

As noted above, it was possible to examine the values, norms and algorithms that made up the referential of the policy adopted to face COVID-19. In legislation, political documents, and in policymakers’ discourse, the substance of the policy was the right to education for all associated with the autonomy of school actors to take decisions locally with a diverse set of stakeholders. The norms to rule the action of schools has consisted of implementing remote learning and a need to support students, especially, the more vulnerable.

## **8.5 Enactment of Policies and Teachers’ Perceptions**

In this section, the text is organized around the pre-defined categories and the subcategories that emerged from the analysis. The interviewees valued the right of all students to access education and, despite differences between schools in how they manage their autonomy in decision-making processes, this was also a matter appreciated by the teachers interviewed. Therefore, in addition to values, it was possible to know

<sup>23</sup><https://www.facebook.com/Apoio-Escolas-104000431233940/>.

<sup>24</sup><https://www.youtube.com/channel/UCDM1UhWp9gUPSGWMXP6EwWQ>.

<sup>25</sup><https://estudoemcasa.dge.mec.pt/2019-2020/>.

<sup>26</sup><https://estudoemcasa.dge.mec.pt/2019-2020/>.

their perceptions regarding the norms and algorithms that make up the policies referential. Regarding the norms—the way things should be arranged in schools—during the pandemic, teachers recognized the great value of focusing on the most vulnerable students and the modality of teaching at distance; this was especially true for the DLP, due to its guiding and regulatory nature, which allowed teachers to have a direction and follow it, and gave them more confidence in their individual practices.

## Values

### *Right to education*

The right to equal access to learning by students was mentioned by teachers during the interviews as integral, and in their view, the use of digital platforms (e.g., Microsoft Teams) and other resources (such as mail, Skype, WhatsApp, Moodle, mobile phones, videos) has helped minimize inequalities in access to learning. In fact, most of the teachers (87%) used digital platforms, recognized the importance of this resource to monitor their students' learning (87%), and ensure that students accessed their classes (80%). These results are in line with national results that reveal that e-mail and WhatsApp were the digital mediums most cited by 80% of respondents (ME/DGEEC, 2020). In this regard, referring to synchronous classes through platforms, a teacher mentioned:

If there is an issue, a difficulty, we can resolve it immediately. The platform has the advantage of being in real time, at that moment.

The importance given to technological tools that allows to give immediate feedback to students is also valued. Teachers stressed that this remote proximity and the access to the students in real time is part of the success in combating inequalities:

There are things that are difficult to achieve without an interaction with the student ... and the use of the platform was good for giving feedback instantly, and seeing the difficulties, accompanying the student (...) in synchronous classes it is easier not to leave students behind, it is not the same as the face-to-face classes, but we have managed to minimize inequality situations and we know that they are in class and have access to the materials.

Moreover, the interviewees have pointed out that, in addition to the platforms for remote teaching, they have used other infrastructures to communicate with students and, above all, to ensure that everyone had had access to information, such as WhatsApp, email, and mobile phones. In this regard, for example, they mentioned the need to use other technological solutions that allowed them to be in close interaction with students and ensure that all students were able to access the activities of the discipline:

The cell phone and email were very useful. There was a class with two gypsy students and I realized that it was best to use the phone to communicate with them. They had come to school to get the materials, but then what could they do with the materials? The oral message is different from the written one and it has been important to have other ways of interacting with them and with the majority of students.

*#EstudoEmCasa* has also been considered by 67% of the interviewees a means for all students to have access to classes, especially those from more disadvantaged

socioeconomic backgrounds. According to a teacher who used to develop other online activities, *#EstudoEmCasa* proved to be the most democratic platform because it reached everyone in the same way, all the families and not only those who can buy a computer:

I think, in this context, *#EstudoEmCasa* was important, because in some way it gave access to classes to all students. Especially the most disadvantaged students, from socioeconomic backgrounds with more difficulties, have accessed the contents, classes on TV. (...) Parents may not have a computer (as in either case), but all students have a television. So, it was an important initiative, and that's why the gap is not so big (...) In my classes, I explored the subjects of *#EstudoEmCasa*, but I also did other things. I used other materials, I put them to experiment with materials they had at home.

However, *#Estudo EmCasa* has been implemented differently. For instance, 27% of the interviewees chose to not explore it during synchronous classes, as described in the following excerpt:

In my discipline, television includes two years conjointly; as a complementary activity it is ok but developing my work with students becomes more difficult and I think it would accentuate the inequalities, because those who have support at home can follow the program and then they study it; those who have no one to accompany them at home, need the materials that the teacher gives them and guides them.

Moreover, it was evident some teachers considered that students who do not have support from families are also not encouraged to view the television program or have help to explore the contents. Thus, they are at a disadvantage compared to students who have this support from families. These teachers opt to develop close work with students with greater socioeconomic difficulties, to reduce inequalities.

### *School autonomy*

The perception of the interviewed teachers is that the schools had the autonomy to decide whether they would use the remote teaching platform, define which one to use, as well as make decisions about the use they would make of the public television program. In some cases, it was not a teacher's option, but a norm decided by school management, as mentioned:

It was an option taken in my school cluster. We give our synchronous classes, we send the materials to the students; those who have no chance of accessing synchronous classes, because they do not have a computer or internet, they come to schools and pick up the materials, and then use *#EstudoEmCasa* as a supplement (...) This has been defined by the school cluster and all [teachers] follow these guidelines.

In other cases, the school's response has been standardized, resulting from collective decision-making, taken by the school's administration and management bodies:

Here, the class and school principals have played a key role. [In my school] (...), the decision also involved the pedagogical and the department coordinators, [together] decided the plan for the group and it was defined that we were going to use Teams for synchronous classes, once a week (...); So, we have started with synchronous moments right at the start of confinement and it was good because it allowed everyone to be more involved and we tried to combat situations of inequality.

Unlike this case, there were instances in which the school clusters have taken the option to give a strong emphasis to *#EstudoEmCasa* and focusing synchronous classes on the program, as one teacher mentioned:

In synchronous classes, we have only cleared students doubts about *#EstudoEmCasa*. The school cluster decided that it would be used as a basis for learning. We have a large percentage of students who come from disadvantaged neighborhoods and have economic difficulties and we considered that *#EstudoEmCasa* would give everyone access to classes since all students have television. It was a way of not favoring any group of students. In class, we asked questions about *#EstudoEmCasa*.

## Norms

### *Social support*

In the interviews, teachers mentioned that, due to government rules, several schools have continued to serve meals for students with greater economic difficulties:

The school had to guarantee food to some very needy students because there are several who need it. The school is the place where they have access to food and sometimes, they only have this meal and that is a reality in my school cluster. In this situation of confinement, ensuring students' meals was fundamental.

In addition to the protective social support given by schools, in the context of the pandemic, schools were tasked with taking on other missions that go beyond their intrinsic educational mission: working in collaboration with the municipalities, to respond to the social and labor needs of local families. An interviewee has echoed the welcoming of students up to 12 years old, whose parents worked at the forefront of combating the pandemic:

Not all schools are operating with support services for families of health professionals, mine is. This was organized by the municipality. There are not many students, but we have this service for these students, and it is important to help parents who are fighting the pandemic.

### *Teaching at distance*

The guiding role played by the DLP in the confinement period has been widely recognized in the interviews. This plan was developed by the school clusters and put into action during March and July 2020:

My school cluster made an E@D Plan and that was important. The plan helped everyone to understand the platforms we were using, how we have organized ourselves during the confinement, the methodologies we were going to follow, and the main interlocutors, the class director, as well as the support and supervision team.

Another teacher stressed the importance of this DLP for students:

The plan was aligned with our educational project and its existence was important for teachers, families and kids to have access to information (...). It ensured a set of guiding principles for teaching during the pandemic, and more than that a useful document for everyone to be informed, to access.

The difficulties felt by schools in the amplification of this Strategic Plan were mainly in relation to the learning assessment (25%), the diversification of work with students (15%) and interventions in the scope of inclusive education (15%). However, according to the ME (2020), schools have been working on the plans, between March and June 2020, adjusting and improving them, which has resulted in a maturation and consolidation of the DLP.

## Algorithms

### *Technological educational responses*

Following what has been previously mentioned, each school had to develop a DLP for the temporary suspension of teaching activities to plan the measures and methodologies that were the most more appropriate in each of the implementing contexts. As the teachers mentioned in the interviews, the DLP has been felt as integral in responding to school needs during the confinement, guiding their action regarding on how to act, what to do, and when to do it. The causal relationship behind this instrument was that it would guide schools' action strategically and technologically while guaranteeing the right of education to students. In fact, as one of the teachers reported, there has been a perception that it was only from the moment DLP was defined and synchronous classes started that the quality of students' learning has been guaranteed:

My school took a while to react and define a plan for this situation. When I started to work with students in a context of total confinement and without access to synchronous interaction, I started to realize that it was not possible. It was difficult to assist the pupils, there were many doubts and doing so by email was not enough. The pressure on our school started to increase to ensure the quality of students' learning, and the school management has taken action.

The same happened in relation to the *#EstudoemCasa* program, as mentioned by a teacher who, in his perspective, "only for itself, it does not guarantee access to learning, but if we explore it with our students and value it in synchronous classes, students give importance and feel that *#EstudoemCasa* can help them learn."

### *Protective social responses*

80% of teachers mentioned that some of their students did not have a computer at home or had to share the computer with their families. Therefore, in their view, providing access to these resources was essential to mitigate inequalities. In the following excerpt, that aspect is very visible:

Microsoft Teams was very important for kids to have classes in real time and my school had already developed the digital technology plan. Not everyone had access to computers and the internet. In my class, there were still 4 or 5 students with more economic difficulties. The school lent them computers to guarantee access to classes and our municipality was also spectacular and arranged some computers for the kids. (...)

## 8.6 Conclusions

This chapter investigated the policy measures introduced by the Portuguese authorities to educate during the COVID-19 crisis and how these policies have been perceived and interpreted by teachers to ensure equity in learning. We examined official and public documents prepared and made available during the first confinement period (March to July 2020) by the Ministry of Education and conducted interviews with 15 teachers from various schools in Portugal.

Our findings show that when schools were physically closed, issues of equity, and social justice were particularly pronounced in the policy discourse, as students with little access to technological devices or learning support were forced to study at home.

These students at the center of this discourse tend to have less access to relevant digital materials (e.g. laptop, computer, quality internet access), physical conditions to work at home (e.g. quiet space to study and/or a desk), parental support (e.g. familiarity with digital resources, socio-cultural capital of families, nutrition). Moreover, students with special educational needs, single parents, or large families are also considerably vulnerable (Education International, 2020). The school closure caused by COVID-19 is believed as likely to contribute to an increase in the number of students who drop out by the time schools reopened. In addition, as there are still many students who do not have computers and/or internet access, protective social responses were taken to respond to inequalities, such as through broadcasting television.

In the following section, we present the main ideas drawn from the results of this study.

### *Policy tools*

The analysis of the documents published between March and July 2020 showed that public authorities quickly responded to the pandemic using two types of tools to reach the school actors and students: informative and communicational. The informative tools consisted of websites to support schools, provide information about distance learning, best practices in teaching, as well as provide diverse information about the implementation of the DLP and inclusive education. Also, a TV program and YouTube channels were created for sharing classes and educational initiatives, along with webinars. Regarding communicative tools, they were diverse, such as, Facebook for consultation and sharing of documents, a platform for school principals' questions to be answered within 24 h, and an email to clarify #*EstudoEmCasa* for schools. Therefore, public authorities offered varied resources to help to resolve teaching problems, suggest strategies, and offer resources for remote teaching. Also, a set of guidelines, instruments, and tools to assist teachers during the suspension of classroom activities were prepared.



### *Policy Measures*

By examining the policy measures implemented to cope with COVID-19, it has been possible to apprehend the values, norms and algorithms that made up the referential of the Portuguese COVID-19 emergency policy. While the adoption of online education was accepted as the key solution to maintaining educational goals, it has also highlighted the vulnerabilities that exist in education systems in different countries and student inequalities (Di Pietro et al., 2020). Findings showed that schools' closure has exposed students to new vulnerabilities. Therefore, regardless of the cycle of studies they attended, students started to have less time on average dedicated to curricular learning, and were forced to stay at home, sometimes with little or no conditions to learn and without support for studying.

The policy referential of the emergency policy adopted in Portugal has been highly focused on the need to ensure continuity of teaching activities remotely while safeguarding that all students have access to it. Therefore, in legislation, political documents, and in policymakers' discourse, the right to education was the substance of the policy. The relevance that was given to this constitutional value has also been associated with the autonomy required by schools in taking decisions, on a local scale, together with a broad network of stakeholders (e.g. municipalities, scouts, postal office, parents associations, etc.), to face and mitigate the effects of COVID-19. This has been particularly important for vulnerable students, in line with the ODS 4, which requires quality, inclusive, and equitable education for all, so that no student is left behind (UNESCO, 2019). In this sense, the principles of action (the norms) focused mainly on switching from face-to-face classes to distance learning. Moreover, in addition to the educational response, schools have provided childcare services for essential service workers, and daily meals to approximately 2,600 students benefiting from the School Social Action in March 2020, which increased to 14,000 students in June 2020. The largest number of meals were served in the Metropolitan Area of Lisbon (ME/DGEEC, 2020).

### *Teachers perceptions*

Through the interviews, we were able to assess teacher perceptions regarding the values, norms and algorithms that make up the policies referential. Therefore, the value—the right to equal access to learning—has been associated (i) with synchronous classes, during which teachers promptly noticed if students were following the activities. Also, they could resolve doubts, provide feedback and, above all, interact with students (an aspect highly valued by the teachers); and (ii) with *#EstudoEmCasa*, which teachers considered an inclusive strategy for all students, with an even greater importance for those from more disadvantaged socioeconomic backgrounds, especially when it is the only way for these students to access classes. This is in line with a questionnaire applied online to 1,754 parents, whereas the results revealed a notable preference for strategies that implied interaction, monitoring, and feedback. Therefore, the ability for students to clear up doubts with the teacher via the internet was the option that were most welcomed as 'Very Important' (98.4%), followed by the use of distance learning platforms (95.3%), video lessons

with interaction (95%), sending worksheets by email (90.6%), and the existence of discussion groups on the internet (82.2%) (Benavente et al., 2020).

The value of autonomy to make decisions was also noted as important. Autonomy was seen as the interface between the right to education, understood as a matter of social justice, and the effective responses they can provide students and families. Thus, the way schools make use of autonomy depends on their governing body's stance: in some cases, for example, the use of the TV program has been promoted by the administration and the management bodies and implemented uniformly by teachers; in other cases, school principals left this issue to the discretion of teachers, and consequently, in the same school, there have been different ways of using the TV program in online classes. In any case, the TV program was a basis for learning and an instrument that was perceived as having an important role in reducing student inequalities.

Regarding the norms, as we saw earlier, in the case of the neediest students, the government established rules designed to combat inequality and provide social support. Teachers recognized the value of focusing on the most vulnerable, and have reinforced the importance of networking, that has been developed locally with municipalities and other stakeholders. Teaching remotely was an official directive based on a strategy which was valued by those interviewed.

In conclusion, results show that in documents and in interviews, similar ideas and values were shared, such as the right to education and the need to support students learning while minimizing inequalities. Through a traditional command and control governing strategy, the government legislated to endorse schools as a public service of social support, and a protective space for the rights of students and families. School actors have been assigned social and economic responsibilities, assuming a duty to provide school meals to students supported by social services and ensuring a network of public schools' childcare services for essential service workers (Ordinance No. 82/2020, of March 19).

The notion that schools can function as a mechanism to reduce social inequalities is widely expressed in political documents and in the voices of the interviewed teachers. Furthermore, the approach used by state authorities was not prescriptive but rather suggestive by providing ideas for what could be done in schools for remote teaching, and preparing a set of guidelines, instruments, and tools to assist the pedagogical work during the suspension of in-person classroom activities. Therefore, in addition to requesting schools to design and implement a DLP, state authorities have given support to the decisions made by the schools rather than imposing any specific practices for education continuity. Thus, we have witnessed a flexible governance of schools, through the offer and availability of varied and appealing resources that, while not being mandatory, gave space for effective proposals for solving problems.

Several implications arise from this study, which illustrate modes of state intervention in the government of education in the context of a health crisis. Thus, the study allows us to realize that in situations like this, it is important: (1) to assure the principle of equity, guaranteeing that students have access to the continuity of classes remotely, with special attention to disadvantaged students, in order to mitigate the exposed inequalities in the context of a crisis; (2) for schools to have the

support and guidance of public authorities, whereas the government has a clear orientation of the way forward to respond to problems caused at the system level by crises such as COVID-19; (3) to empower schools and maintain a close relationship between schools and families, via communicative tools, and through the creation of local collaborative networks, involving various stakeholders in a logic of local governance that, due to the proximity of problems, allows to respond more quickly and more effectively to unforeseen events such as the pandemic; (4) to invest in strategies that, whenever possible, involve interaction with students, thus allowing to give feedback and monitor progress, in addition to contributing to the increase of students' motivation.

Finally, while not intended to be representative of the national context, this study has made relevant contributions to the analysis of the referential (Muller, 2018) that supported the emergency policy triggered during this phase of the pandemic in Portugal. The interviews with teachers are illustrative of responses put into action in their local contexts, in view of the laws and recommendations issued by the government. In future research, it will be important to consider the influence of the schooling year of students in the response given to the pandemic, as well as the cultural and socioeconomic context in which schools are situated.

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**Estela Costa** holds a Ph.D. in Education, in the specialization area of Administration and Educational Policy, from the Institute of Education, University of Lisbon (IE-ULisbon). She is a professor at the IE-ULisbon and a researcher in the ‘Research and Development Unit in Education and Training’ (UIDEF). Presently, she is deputy director of the IE-ULisboa and coordinates the M.Ed. in School Management and Administration. Currently, she is the Portuguese national expert at the European Commission Independent Experts in Education and Training. Her research focuses on school management and leadership, innovation, education policy and school evaluation, and ILSA.

**Mónica Baptista** holds a Ph.D. in Education, in the specialization area of Science Education, from the Institute of Education of the University of Lisbon, Portugal (IE-ULisbon). She is a professor at the IE-ULisbon and a researcher in the ‘Research and Development Unit in Education and Training’ (UIDEF). Presently, she is deputy director of the IE-ULisboa and coordinates the master program in Physics and Chemistry teaching. Currently, she is the Vice-President of the Portuguese Physics Society. Her research focuses on inquiry-based science education, STEM education, ICT in science teaching, and lesson study with pre-service and in-service teachers.

**Carolina Carvalho** holds a Ph.D. in Education, in the specialization area of Educational Psychology, from the University of Lisbon, Portugal (IE-ULisbon). She is a professor at IE-ULisbon, and a researcher in the ‘Research and Development Unit in Education and Training’ (UIDEF). Presently, she coordinates the Erasmus Mobility Office of the IE-ULisbon. Her research focuses on the domain of learning and teaching in several school grades and with different students and problematics.

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# Chapter 9

## General Education in Russia During COVID-19: Readiness, Policy Response, and Lessons Learned



Sergey Kosaretsky, Sergey Zair-Bek, Yuliya Kersha, and Roman Zvyagintsev

**Abstract** In this chapter, we analyze nationwide measures taken in Russia to organize the education system during the pandemic. We show the opportunities and limitations for responses associated relative to the previous policy phase. Special attention is paid to the peculiarities of a system reaction to the situation of a pandemic in a federative country with heterogeneous regions. In contrast to several other countries that adopted a single national strategy, different scenarios were implemented in Russian regions. We investigate the factors that influenced the scenarios and management decisions at the national and regional levels of the country. We highlight differences in the nature and dynamics of measures taken to organize learning in the first (spring–summer 2020) and second (autumn–winter 2020) waves of the pandemic. We also analyze the subjective experience and wellbeing of students and teachers during a pandemic. As the empirical base, we use data from several large sociological studies conducted in the Russian Federation over the past six months on the issues of school closures, distance learning, and the “new normal.” This provides a new perspective for studying the increasing education gap between children with different socioeconomic status due to the pandemic.

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S. Kosaretsky (✉) · S. Zair-Bek · Y. Kersha · R. Zvyagintsev  
Higher School of Economics (HSE), Institute of Education, 16 Potapovskiy Pereulok, Building  
10, 101000 Moscow, Russia  
e-mail: [skosaretski@hse.ru](mailto:skosaretski@hse.ru)

S. Zair-Bek  
e-mail: [szair-bek@hse.ru](mailto:szair-bek@hse.ru)

Y. Kersha  
e-mail: [ykersha@hse.ru](mailto:ykersha@hse.ru)

R. Zvyagintsev  
e-mail: [rzvyagincev@hse.ru](mailto:rzvyagincev@hse.ru)

## 9.1 Introduction

The COVID-19 pandemic posed an unprecedented challenge to over 44,000 schools, 16.3 million students, and 2.16 million teachers in Russian schools (Ministry of Education of the Russian Federation, 2020a). The government has had to solve the complicated problem of providing constitutional guarantees of universal free secondary general education while minimizing the immediate health risks for students and teachers as well as the spread of infection through schools.

In this paper, we describe the situation in which the Russian education system found itself during the COVID-19 pandemic and the education policy measures adopted by the government at the federal and territorial levels. We examine the contextual factors that influenced decision making and reflected the specifics of the country's territorial structure and education management system. We highlight the differences between measures for ensuring the functioning of the education system during the first and second waves of the pandemic and their dependence on the epidemiological situation. Lastly, we discuss the impact and lessons learned from the experience during the pandemic for student quality and wellbeing and the future development of the education system (including policies aimed at families and teachers, digitization, and management models).

The empirical section of the chapter focuses on the subjective wellbeing (SWB) of Russian schoolchildren during the quarantine. We consider this topic to be especially important in the representation of the Russian case because: (1) the topic of subjective wellbeing as a part of the educational process and results has been traditionally ignored by Russian educational policy; (2) subjective wellbeing in the Russian Federation is on average lower than the OECD average (OECD, n.d.); and (3) in the context of a pandemic, subjective wellbeing may be a significantly more important indicator of how well an education system is doing. In addition to a general analysis of the factors associated with subjective wellbeing during school closures for quarantine, we focus on inequality in subjective wellbeing—what happens to children with different socioeconomic status? Against the background of increasing inequality in educational outcomes amidst the pandemic, it is critical for us not to overlook any possible widening gap in subjective wellbeing as this could be a much more dangerous effect of the pandemic on the education system.

## 9.2 Methodology, Data, and Limitations

We use Russian federal statistics on education and related indicators, such as demographic and economic ones, to identify and describe the context of the education policy. To analyze the administrative decisions adopted for mitigating the consequences of the COVID-19 pandemic, we drew upon open sources (official websites of national, regional, and municipal government agencies, school websites, and

mass media) and interviews with different regional and municipal government officials (over 20 full-length online interviews through Skype). These interviews were conducted by the Higher School of Economics Institute of Education during the period March–October 2020. To assess the readiness of teachers, students, and families for distance learning, we used the results of international studies such as PISA and TALIS (OECD, 2018). To study changes in teaching and learning practices, the labor and living conditions of teachers and students, and the reaction of families to the new study regime, we used the results of sociological surveys administered by governmental and non-governmental organizations, including the School Barometer International Study (Isaeva et al., 2020a).

The goal of the empirical part of the study was to identify and compare the level of subjective wellbeing of Russian schoolchildren before school closures in the spring of 2020 and at the present time (winter 2020). We use data from a study by the HSE Institute of Education. The data was collected in November–December 2020. To assess the situation before the first school closures in spring 2020, we employed retrospective questions about the students' state at that time.

The survey examined four Russian regions: Moscow, Kaliningrad, Leningrad, and Tyumen Regions. The sample of education organizations within each region was stratified by the type of locality (urban or rural) and the socioeconomic status of the school (low, middle, high). The stratified random sample was selected among all the schools of these regions with the help of information obtained during previous studies on the quality of education (e.g., number of computers). The final sample of the present study comprised 7,355 students between the ages of 8 and 19 (grades 4–11) from 99 Russian schools in the Moscow, Kaliningrad, Leningrad, and Tyumen Regions.

The student questionnaires included questions about students' main socio-demographic and economic characteristics (age, gender, parents' higher education, home possessions), their subjective wellbeing before the closure of schools and at the present time (identical set of questions about the periods "before" and "after"), and their ways of interacting with school during the absence of face-to-face education. In addition to the students' answers, the survey made use of school-level variables: share of teachers with the higher qualification category; number of computers connected to the internet per student; percent of students whose parents have a higher education; and type of school area (urban or rural).

We based our questionnaire on a combination of instruments to assess the subjective wellbeing of schoolchildren: Holistic Student Assessment (Malti et al., 2018) and assessment of students' distress level (Goodman, 2009; Brann et al., 2018). According to the theoretical framework, student subjective wellbeing includes several components, of which the following were used in the present study: (1) orientation on physical activity, (2) optimism, and (3) level of distress. We assume that these components are especially important in the context of a pandemic when students may suffer from anxiety and the lack of physical activity. To measure the level of each component, the questionnaire presented 3–5 different statements with responses on an ordinal scale. Some respondents who provided identical responses to all questions were excluded from the analysis. Hierarchical confirmatory factor analysis (CFA)



was used to calculate the overall indicator of subjective wellbeing. We tested a theoretical two-level model, where the first level measured the orientation on physical activity, optimism, and stress level, while the second level measured subjective wellbeing. The results of our analysis confirmed the high quality of this model for two cases: before and after the closure of schools (Appendix 1). The resulting values of the subjective wellbeing score and its components before and after the closure of schools were then used for the purpose of further analysis.

To compare the level of subjective wellbeing of the same students in the studied regions before and after the closure of schools, we made a pairwise comparison of indicators using the t-test for dependent samples. A similar methodology was used to check if there were any differences in the change of subjective wellbeing during the period of pandemic for students with different amounts of home possessions. Using descriptive analysis, we examine how students communicated with their schools during the pandemic. The next step was to use multilevel modeling to assess individual and school factors connected with student SWB before and after school closures and with its variation over the period in question. To assess the changes in subjective wellbeing, we subtracted the current value of the level of wellbeing from its level before school closures. During the final stage, we used ANCOVA analysis to compare the mean indicators of subjective wellbeing in four regions while controlling for significant relevant individual and school factors. The inclusion of covariates in the analysis led to a better assessment of the differences connected directly to regional factors rather than to the students' family or school.

### **9.3 The Russian Education System in the Face of the COVID-19 Coronavirus Pandemic**

To understand the reaction of the Russian education system to the pandemic, we must consider how education policy measures are discussed and implemented at the federal and regional levels. First and foremost, Russia's vast territory and heterogeneous spatial development led to significant differences in both the infection rate and the readiness to organize education activities during a pandemic throughout Russian regions (Mau et al., 2020; World Bank, 2018).

Russian indicators of "computerization" and "connection of schools" to the internet are above the OECD average (OECD, 2018). At the same time, the speed of broadband internet connections is lower in Russia than the world average, amounting to 45 Mbps. Only 76.9% of Russian households have access to the internet, and only 73.6% of them have access to broadband internet (Information Society in the Russian Federation, 2020). A favorable situation exists in approximately 40% of Russian regions as they have high indicators in both factors (availability of high-speed internet and computer technologies).

Russian regions have different levels of urbanization. Some regions, especially in Siberia and the Far East, have large numbers of small settlements with a poorly

developed digital infrastructure. School students living in these areas experienced the greatest difficulties in distance learning. At the same time, the remoteness of villages and the small size of schools were grounds for keeping schools open in those regions.

Difficulties with organizing distance learning disproportionately affected economically disadvantaged and multi-child families. About 4 million economically disadvantaged individuals in Russia are schoolchildren between the ages of 7 and 16. Every sixth Russian inhabitant between the ages of 0 and 17 lives in a multi-child family. The different distributions of these families across regions led to various difficulties in providing such children with computer technologies. The problems were particularly acute in North Caucasian regions and several regions in Central Russia, including the Moscow and Leningrad Regions. In contrast, the cities that formed the nuclei of these regions (Moscow and Saint Petersburg) did not suffer from such difficulties. Different resource availabilities in cities and their surroundings contributed to the growing inequality of school students during the pandemic.

In terms of distance learning infrastructure, different collections of digital resources and the Russian Electronic School national distance learning platform had been created at the federal level before the beginning of the pandemic. Some regions had also set up their own digital platforms and services that could be used for distance learning; the best-known example is the Moscow Electronic School. In recent years, a market has emerged of private digital education resources and services for both distance and blended learning. Contracts with various digital platforms have been signed by separate regions, municipalities, and general education organizations, giving them an advantage during the pandemic.

Another major factor was the federative structure of the state and the division of responsibilities between federal executive agencies, regions, and municipalities that hindered the implementation of a unified state strategy for the entire school system. Most schools in Russia are managed by local municipal agencies. Free schooling in Russia is financed by regional governments. The maintenance and renewal of school property (buildings, equipment, etc.) is financed by local municipal agencies. Federal education management agencies set the standards for education outcomes and the conditions that must be met to attain them. The federal government also sets the principal models for organizing the system's work, including the assessment of education quality, the professional development of teachers, the organization of inclusive education, digitization, etc.

During the pandemic, this distribution of powers resulted in the following situation: the Federal Ministry of Education established the general principles for education organizations (banned mass events, created norms of social distancing, etc.), implemented national measures (launched digital platforms with learning and teaching materials, organized televised lessons), changed the dates and form of the state final certification, and monitored measures taken at the territorial level. At the same time, decisions on extending vacations, closing/opening schools, and classes, fixing the end of the school year and other organizational matters were made at the regional and municipal levels. Regions and municipalities were responsible for assuring the digital infrastructure such as the availability and quality of internet access as well as the provision of PCs and laptops to teachers and students. It frequently

turned out that the regions with the least financial resources for solving these problems were the same regions with the greatest needs.

In addition to the distribution of managerial powers, there is relevant background of relations between federal and regional government agencies. Over the past 5 years, the Federal Ministry of Education has de facto centralized decision making and limited the autonomy of regions in choosing the subjects and development models of general education. For this reason, after the pandemic began, many regions waited for instructions from the federal ministry. Nevertheless, the latter stressed the rights and responsibilities of regions in deciding which measures should be taken in response to the pandemic. This was quite unexpected for some regions.

## 9.4 Education Policy at Different Levels During the COVID-19 Pandemic: General Trends

The first cases of COVID-19 were recorded in Russia in February 2020. The disease began to spread in early March 2020. The development of the epidemic corresponded to the widespread international model of two disease waves and peaks. The first peak of the epidemic (11,656 new cases daily) occurred in early May 2020. The incidence of the disease subsequently fell until September 2020. This was followed by the second wave of the pandemic between September and December 2020 with a peak (29,935 new cases daily) before the beginning of the winter holidays and school vacation.

The strategy of the Russian education system differed considerably between the two waves of the pandemic. During the first wave, a nationwide lockdown was introduced for all intents and purposes, and most schools switched to distance education. During the second wave, the restrictions greatly differed from region to region, and most schools remained open.

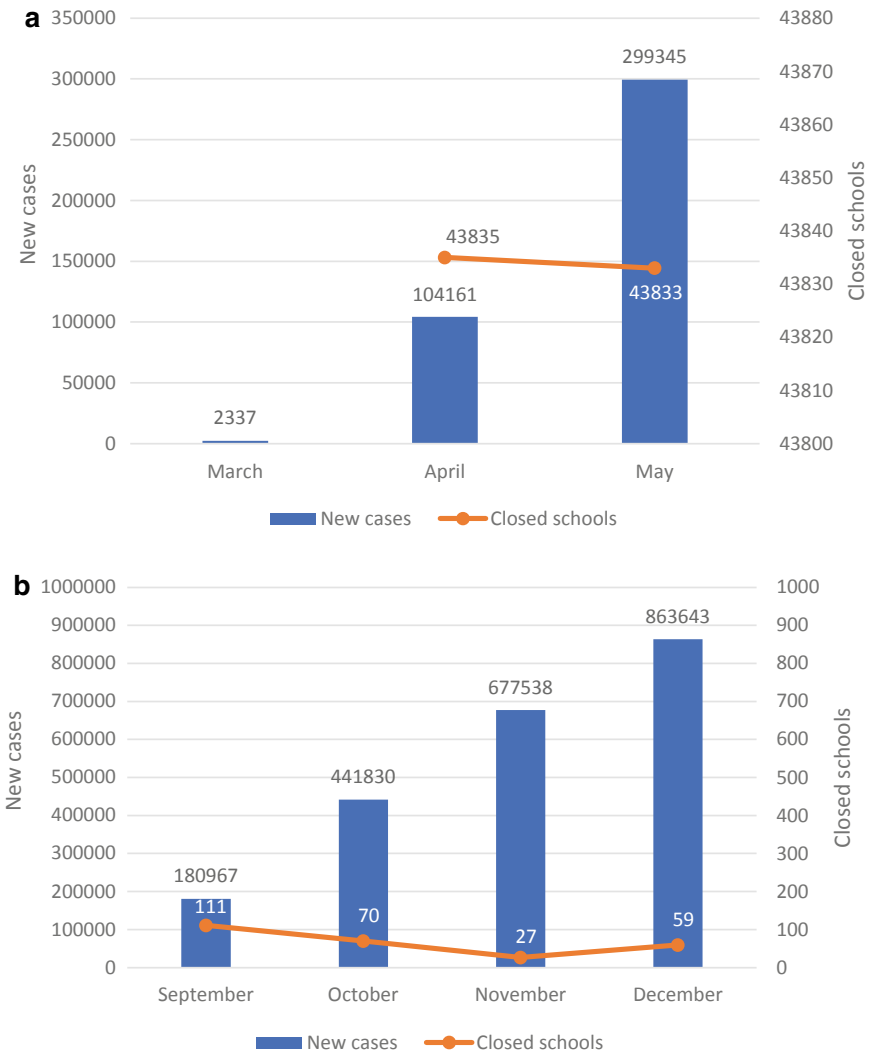
Moreover, as our study shows, school closures during the quarantine had little to do with the real incidence rate of the disease (see Fig. 9.1a,b). Due to the limited access to data on the incidence rate of the disease among children and on the impact of school closures on disease incidence, the decisions to close schools for quarantine or switch to distance study were made based on general federal policy.

### *First wave*

After the beginning of the COVID-19 pandemic, the Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing enacted rules for the organization of educational activities after the quarantine, including cancelling mass events, dividing classes (to limit contact), implementing disinfection measures, and introducing special measures during the state final certification.

The Russian Ministry of Education initiated and/or supported the following key organizational and technological solutions:

1. Cancelling the unified final state certification after the 9th grade



**Fig. 9.1** **a** New cases of disease and the number of schools closed for quarantine during the first wave of the pandemic. **b** New cases of disease and the number of schools closed for quarantine during the second wave of the pandemic

2. Postponing the dates of the unified state exam (USE) after the 11th grade
3. Cancelling the USE for students who do not plan to enter university
4. Hotlines for school directors and regional education management agencies to answer questions about the organization of distance learning
5. TV projects for senior high school students for broadcasting lessons

## 6. Providing schoolchildren from particularly disadvantaged families with computers for distance learning

The Russian Ministry of Education allowed regions to make their own decisions based on the local epidemiological situation about the partial premature termination of the school year and about extending school vacations and changing quarantine regimes. The Russian Ministry of Education also introduced several distance learning platforms from which regions could choose.

Nevertheless, these support measures did not work immediately. Each region had to make its own choice based on different factors. In some cases, regional education management agencies announced the early termination of certain (non-core) classes for students in grades 1–8. This led to the reduction of study loads and internet traffic. This took place in some Siberian regions and regions along the Volga River.

Several regions signed special agreements with internet providers for delivering internet services at reduced rates or free of charge and using secondary regional resources for distance learning needs. They also signed agreements with mobile network operators for lower internet rates and special packages for teachers and students. Some regions also used various other mechanisms such as creating mirror sites and hosting education resources. In some regions, internet providers offered internet traffic for distance learning at low rates or virtually free of charge to economically disadvantaged families. Several private online platforms (Yandex Textbook, Uchi.ru) provided free content to support schoolchildren and prevent academic lag.

The lack of computers in families for organizing distance study was compensated by different regions in various ways. In some areas (such as the Moscow Region), school notebooks were offered to families. Other regions (such as the Republic of Sakha-Yakutia) bought computers to offer them to families. In Saint Petersburg and other regions, computers for families were bought with the help of sponsors. Finally, as we mentioned above, the federal government launched a fundraising campaign for purchasing computers for families in need.

To help teachers organize the study process from home, some regions offered school computers to teachers and provided them with technical assistance in configuring home computers and connecting them to the internet. The federal government implemented the project “Education Volunteers,” in which senior students from teaching colleges helped teachers who were unfamiliar with computer technologies to master the basics of organizing distance learning.

In many regions, education development institutes and municipal curricular offices helped teachers by offering express courses and consultations on working in the new format, recorded video guides and training webinars, opened tutor centers, and organized consulting by curricular association directors and teachers who had won professional competitions. Other regional initiatives catered to parents. Hotlines were setup to consult and assist both parents and children using the new distance learning format. These hotlines were staffed by specialists from education management agencies, education psychologists, school counselors, and teachers. In different regions, schools provided support for low-income families distributing food products and even ready meals.

The regions that were the best-positioned to deal with COVID-19 had prior experience in organizing distance learning in bad weather conditions. In these regions, online study was quickly and efficiently deployed, while teachers were much better prepared for the distance learning format. The same was true of individual education organizations that had already begun to develop digital environments before the pandemic, actively used electronic agendas, maintained up-to-date sites stocked with different content, and participated in social media groups. All these instruments were easily adapted to serve the needs of distance learning.

As the first wave of the pandemic showed, distance learning was best organized in territories in which regional and local management teams took the initiative without waiting for directions from federal education management agencies.

All schools in Moscow and the Moscow Region were given the opportunity to work on a high-quality platform with a full range of content. The Republic of Tatarstan invited its schools to use several different education platforms simultaneously for different subjects and grades. At the same time, internet access was almost completely lacking in rural schools in several South Siberian regions, forcing teachers to bring homework assignments to collection points (such as village stores), from where they were gathered by parents and students. Some regions in the Far East, South Siberia, and Far North organized education with the help of televised educational programs.

No analytic or preparatory work for the new school year was conducted during the summer holidays (June–August). No nationwide programs for improving the availability and quality of internet access and computer technologies were implemented, either.

During the first wave of the pandemic in the spring, many parents, teachers, and education managers at different levels believed that the pandemic was a temporary emergency that would soon end without requiring the education system to make any major changes. Some parents, teachers, and students did not believe in COVID-19 or considered its danger to be greatly exaggerated. The skeptical attitude of some teachers, parents, and schoolchildren to the risks and dangers of the pandemic, especially during the first wave in the spring, as well as the belief that the quarantine would not last long led to a certain inertia and reactionism of managerial decisions.

Interviews with officials of regional and municipal education management agencies have shown that the uncertainty and lack of clear forecasts about the development of the pandemic, especially during its initial period, led regions and schools to take quick short-term measures. These measures had small time horizons and were based on the expectation of a rapid return to the usual format of face-to-face learning. The distance learning format was viewed as a temporary emergency measure that did not require any major investments of resources. In addition, the tendency to downplay the pandemic and its consequences for schools was also linked to the lack of clear and unambiguous instructions from the federal government by the respondents. The freedom allotted to regional, municipal, and school managers to take their own decisions was often interpreted as a sign that the federal government did not know what to do in the circumstances. On the other hand, the lack of control from above was seen as an opportunity to avoid “awkward” measures that could irritate parents, teachers, and students.

Due to the increased loads during the distance learning period and the prolongation of the school year, teachers were given an additional leave before the start of the new school year. Most teachers, parents, and students expected the school year to start in the traditional place-based format. Regions partially implemented local preparatory measures for preparing schools for the school year: renovating and re-equipping buildings, providing high-speed internet access, and training teachers.

### *Second wave*

In October, it became clear that the second wave of the coronavirus pandemic had already begun in Russia. Federal government agencies had not issued any teaching or organizational recommendations by the beginning of the second wave, stressing that regions should make all managerial decisions on their own. Only in early October did the Russian Ministry of Education elaborate and publish recommendations on amending study programs in view of the coronavirus infection and recommendations on using information technologies (Ministry of Education of the Russian Federation, 2020c, d). The Ministry published practical recommendations on organizing the work of teachers in the distance learning format only in November (Ministry of Education of the Russian Federation, 2020b). In these conditions, regions continued to provide curricular support to schools and train teachers on their own.

The second wave was a lot more extensive and serious than the first. The prevalence and incidence rate of the disease increased. Nevertheless, this situation did not lead to the mass transition of the education system to the distance learning format, as had been the case during the first wave (Fig. 9.2).

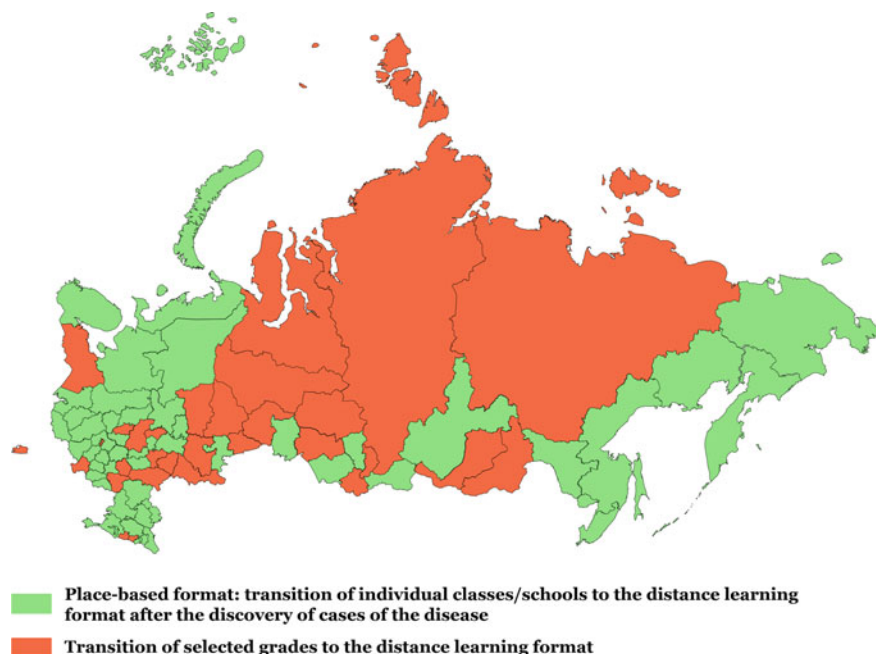
In October–November 2020, 55 regions kept schools in the place-based format (with isolated transitions to quarantine regimes and distance learning when the minimum prevalence rate of the disease was surpassed), while 30 regions made a partial transition to the distance learning format. While different regions put different grades into distance learning, almost none of them applied this measure to primary schools; the mass distance learning format also did not affect schools with small student bodies, as a rule. 70% of schoolchildren continued to study in the place-based format in October–November. Only 0.1% of all schools were closed entirely for quarantine.<sup>1</sup>

By late December, the total number of closed schools had decreased, even though the incidence rate of the disease continued to grow. Only 64 schools in 20 regions were still closed (0.16% of all schools) in late December (Fig. 9.3).

At the same time, some regions with high incidence rates did not adopt distance learning. 37 regions did not extend the fall break, while 48 regions extended the fall break by 1–3 weeks. Vacation prolongation was the most widespread anti-pandemic measure in Russian regions (a prolongation of 2 weeks in 40 regions and 3 weeks in 8 regions). Once again, many regions with high incidence rates refused to prolong school vacation, and only 39% of regions with high incidence rates converted

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<sup>1</sup><https://edu.gov.ru/press/3172/sergey-kravcov-glavnyy-princip-sozdaniya-cifrovoy-obrazovatelnoy-sredy-v-tom-chto-process-obucheniya-nahoditsya-na-pervom-meste-a-tehnologii-na-vtorom/> (accessed on January 19, 2021).

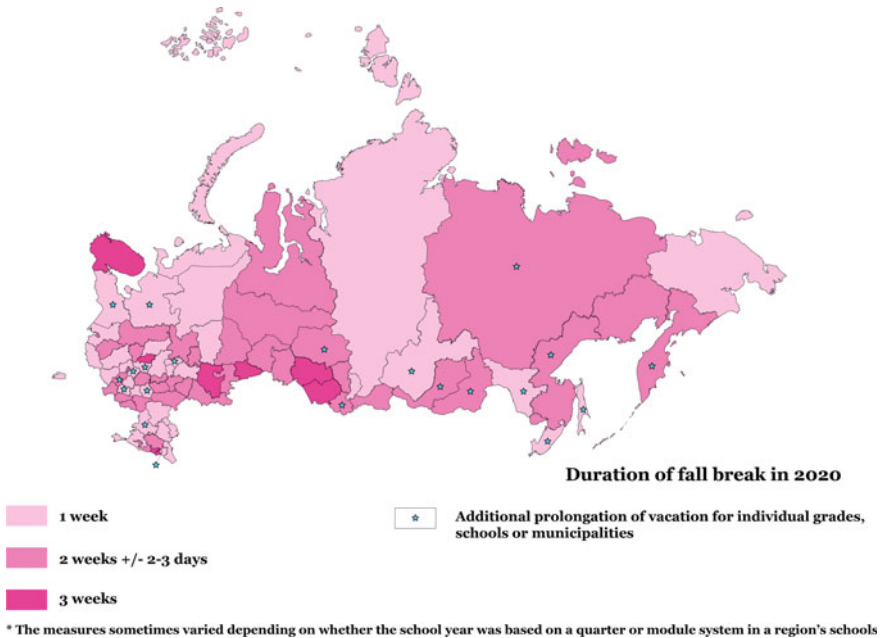


**Fig. 9.2** Distribution of place-based and distance learning formats in the Russian Federation in October–November 2020 (Mertsalova et al., 2021)

schools to distance learning. Moreover, regions with similar conditions sometimes took different decisions. For example, Moscow put middle and high school students on distance learning, while Saint Petersburg retained place-based education for all schoolchildren, even though the incidence rates and risks of infection in Saint Petersburg were no lower than in Moscow. In some cases, parental protests over distance learning along with electoral worries discouraged government officials from making changes. Parental anxieties grew despite repeated assurances that distance learning would not be introduced under any circumstances (Kommersant, 2020). Thus, anti-pandemic measures during the second wave were chosen more based on social and political factors than objective assessments of the risks.

An important role was played by political signals from the federal center based on fears of aggravating social and economic problems due to the pandemic. Another major factor was growing popular discontent. Parents' tensions and mistrust of the distance learning format grew as the pandemic progressed. A survey conducted in mid-April showed that 63% of parents believed that schools had successfully shifted to distance learning, while 17% of parents disagreed (Public Opinion Foundation, 2020). In a survey in May, 55% of surveyed parents of final-year students expressed their discontent with the organization of distance learning (Rambler News Service, 2020). By the start of the following school year, 93% of parents believed that study should be implemented in a place-based format. This was motivated by the assertion





**Fig. 9.3** Prolongation of fall break in Russian regions (Mertsalova et al., 2021)

that face-to-face study allows children to communicate and socialize (30%) and leads to better education quality (20%), better knowledge (17%) and direct contacts with teachers (16%); in addition, parents believe that they cannot educate their children as well as teachers (14%) (Russian Public Opinion Research Center, 2020). Some mass media even launched an information campaign claiming that the government was planning to abandon place-based education altogether after the end of the pandemic.

## 9.5 Consequences and Lessons of the Coronavirus Pandemic

The experience of transforming the general education system in Russia in the conditions of the pandemic has produced important consequences and lessons for the development of Russian education both today and in the future. Russian experts agree that the reorganization of education during the pandemic, especially during the first wave, led to losses in the quality of education on account of changes in the employed technologies and the reduction in study time (due to prolonged vacations as well as schools and classes put in quarantine). With regards to technology, distance learning is not yet fully able to replace face-to-face learning, according to most teachers,

parents, and students. Many distance lessons have suffered from poor quality, simplified content, and the lack of interactivity and feedback. The reduction in study time depended on the school and the subject. Subjects calling for student participation (physical education, art, music, technology, etc.) were particularly affected.

At the same time, the national system for education quality assessment does not provide open data about education losses, as we have already mentioned. According to World Bank forecasts, Russian schoolchildren will lose about 16 points on the PISA reading score or 1/3–1/2 year of study on average (World Bank Group, 2020). The Ministry of Education postponed the annual national tests (taken by all school students simultaneously and in the same format) from April to the beginning of the school year to serve as “initial assessments that would be used to correct the study process” (RG, 2020).

The very idea of conducting a monitoring and diagnostic study of the readiness of students for the new school year and their academic lag due to the extraordinary study circumstances in March–May 2020 was considered very important for both theoretical and practical reasons. The large sample (6 million people) could have been used to identify typical problems and difficulties faced by students and elaborate recommendations for teachers on the format of curricular materials for place-based and distance learning formats. The analysis of the identified problems could have also served as a guideline for private producers of educational content, including designers of digital platforms. However, no analysis of the sort was conducted, and the results were neither discussed by the expert and teacher communities nor used as sources for planning teacher retraining courses and the work of education psychologists. The Ministry’s methodological recommendations invited schools and teachers to analyze the results of the national tests themselves and to submit within two weeks a proposed schedule of working with students experiencing academic problems (Ministry of Education of the Russian Federation, 2020e). Thus, the national tests led to an additional workload being put on teachers in the absence of all informational and curricular support from the federal government.

During the first semester of the new school year, no national measures (extra classes, prolonged school year, vacation programs, etc.) were taken to compensate for losses in education quality that affect student trajectories and labor market prospects, despite recommendations by international organizations (UNESCO, 2020). Our analysis shows that few regions and schools implemented such measures at their own initiative. The introduction of such measures aimed both at students completing school during the current year as well as planning to enter vocational colleges and universities and at the entire student body that has been adversely affected by the pandemic remains a key yet open item on the agenda.

Another major negative consequence is the deterioration of the subjective well-being and psychological health of students because of the adverse impact of living conditions during the pandemic (including the lack of social interaction, face-to-face communication between children, and communication between children and adults during mutual activities; strained family relations; reduced physical activity; and significantly reduced external support for study). 78% of surveyed parents spoke about the growing discomfort of their children due to the lack of communication with

peers, noting that this is a very important function of school. Only half of surveyed parents (49.3%) said that teachers interacted with pupils in the distance learning format and organized direct communication. A similar share (49.6%) noted that teachers provided feedback to students about study and assessment results (Isaeva et al., 2020a). Psychological problems resulting from self-isolation and distance learning were found among 83.8% of Russian schoolchildren: 42.2% purportedly suffered from depression and 41.6% from asthenia (TASS, 2020).

In the context of the data already available, we decided to conduct a separate study. We were less interested in the absolute picture of the subjective wellbeing of schoolchildren than in whether the patterns of changes differ for children with different SES. Additionally, we looked for indirect evidence of whether schools “lose” children during quarantine by examining the characteristics and frequency of interaction between the school and the child.

### *Subjective wellbeing and psychological health of students*

Researchers now predominantly ignore such topics, focusing instead on the analysis of objective losses in the quality of learning due to digital inequality (Engzell et al., 2020; Robinson et al., 2020; Van Lancker & Parolin, 2020). They disregard the theme of subjective wellbeing, although psycho-emotional problems due to school closures, lack of traditional summer vacations, illnesses of close relatives, and an uncertain future may have an even bigger impact on students (Ghosh et al., 2020). At the same time, certain international monitoring studies (OECD, 2017) assess subjective satisfaction with life. Promoting subjective wellbeing is the third of the 17 UN Sustainable Development Goals (United Nations, 2020). This is particularly relevant during worldwide pandemics such as COVID-19. In the present study, we analyze contextual factors at the school and individual levels related to different SWB trends of Russian school students during the COVID-19 pandemic.

The notion of wellbeing is understood in different ways depending on the context. However, it is clear that wellbeing is a complex notion that cannot be measured by a single indicator (Borogonovi & Pál, 2016). Wellbeing studies traditionally examine all participants of the educational process—children (Yu et al., 2018), parents (Buehler, 2006), teachers (McCallum et al., 2017)—and the connections between them (Casas et al., 2012; McCallum & Price, 2010). In the OECD framework, wellbeing comprises 11 indicators, including personal security and social connections (OECD, 2017). In this paper, we focus only on subjective wellbeing, ignoring other dimensions such as health. We define wellbeing as “the assessments, whether positive or negative, that people make of their own lives” (Diener, 2006).

Many organizations, besides OECD, make international comparative studies about the contextual factors that determine the subjective wellbeing of school students. For example, a study by Korean scholars shows that subjective wellbeing is best predicted by variables from the micro level of children’s life (family, school and close community), while economic and broader national contextual factors are less or not at all significant (Lee & Yoo, 2015). However, another study shows that national factors are, on the contrary, quite important: the better the public health, material wellbeing, and education system in a country, the higher the children’s subjective

wellbeing (Bradshaw et al., 2013). At the same time, the comparison of rural and urban territories within a single country traditionally shows that rural children have a higher level of subjective wellbeing (Gross-Manos & Shimoni, 2020; Rees et al., 2017). Nevertheless, this trend may only apply to countries with a sufficiently high overall standard of living in rural areas (Requena, 2016).

Regarding studies of the impact of inequality (whether economic or territorial) on the subjective wellbeing of children, a survey of 15 different countries in Europe, Asia, and Africa demonstrated a positive connection with a child's home possessions yet no connection with economic inequality indicators at the national level (Main et al., 2019). Studies of so-called "rich societies" paint a different picture: the wellbeing of children at the national level is connected with the level of economic inequality in a country yet not with the mean wage (Pickett & Wilkinson, 2007). At the same time, other studies show that the lower the general socioeconomic level of the neighborhood in which children grow up, the lower their subjective wellbeing (Laurence, 2019). However, this paper indicates that there is no direct connection here: disadvantaged communities have more negative and fewer positive social interactions, which results in lower wellbeing (Ibid.).

Researchers from Yale University and Columbia Business School show that the higher the income inequality in a country, the higher the level of subjective wellbeing. Although this does not directly apply to children, it is an important consideration since the authors conduct an extensive analysis of the contradictory nature of statistics in this field (Katic & Ingram, 2017). Objective aspects of wellbeing are unequally distributed by gender, age, class, and ethnicity and are strongly associated with life satisfaction (Western & Tomaszewski, 2016). Although there are relatively few studies of the effect of specific factors on subjective wellbeing, especially in the case of children, we attempt to do so in this study. There are many studies on the relation between subjective wellbeing and age, which show that most developed countries have U-shaped SWB curves with a minimum at the age of 40–50 (Stephoe et al., 2015). At the same time, the objective and subjective SES of people is connected to changes to the SWB in at least a 4-year perspective (Zhao et al., 2021).

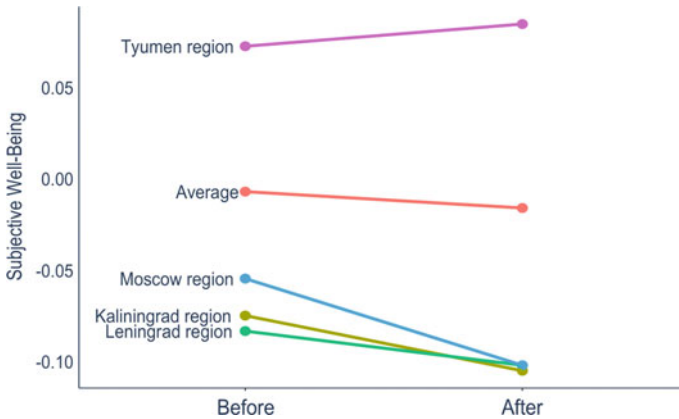
In the present study, we examine the existence of similar trends for children over a short-term period. Clearly, a country's social policies are important in the long term: children are happier if they live in favorable conditions and safe communities, attend good schools, etc. (Bradshaw, 2015). However, we cannot examine such policies here. Instead, we look at the impact of certain factors "here and now" rather than in the long term.

One example of the questions that were included in the survey as a component of wellbeing scale is the statement: "There are more good than bad things in my life." Respondents were asked to agree or disagree with this claim. It can be seen from Table 9.1 that the distribution of answers for the period before school closures differs from answers about the current situation. We can see a widening pattern for opposite categories, which is also true for the SWB index as a whole.

A comparison of the level of subjective wellbeing of students before the closure of schools in the spring and at the present time shows that this indicator fell on average in most of the studied regions (Fig. 9.4). Significant decreases in the level of

**Table 9.1** The distribution of answers on the Item “There are more good than bad things in my life”

Answers	Before	After	Change
Never	231	276	+45
Sometimes	1381	1316	-65
Often	3275	2974	-301
Almost always	2468	2789	+321



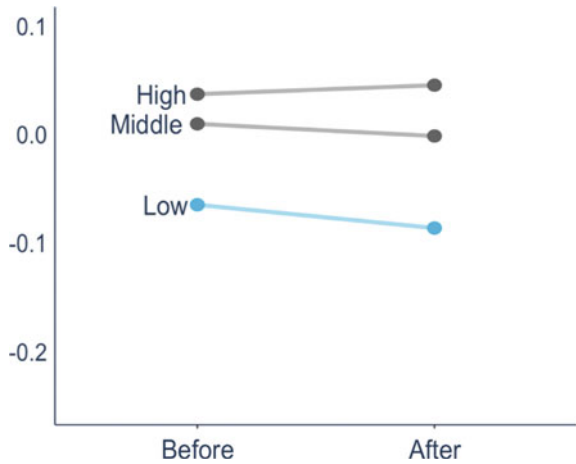
**Fig. 9.4** Student subjective wellbeing before and after school closures

wellbeing were observed in the Kaliningrad Region ( $t = 3.14, p = 0.001$ ), Leningrad Region ( $t = 1.76, p = 0.039$ ) and Moscow Region ( $t = 1.65, p = 0.050$ ). The latter experienced the greatest decrease. At the same time, the wellbeing of children in the Tyumen Region increased slightly over this period, although this increase was not significant ( $t = -1.58, p = 0.943$ ).

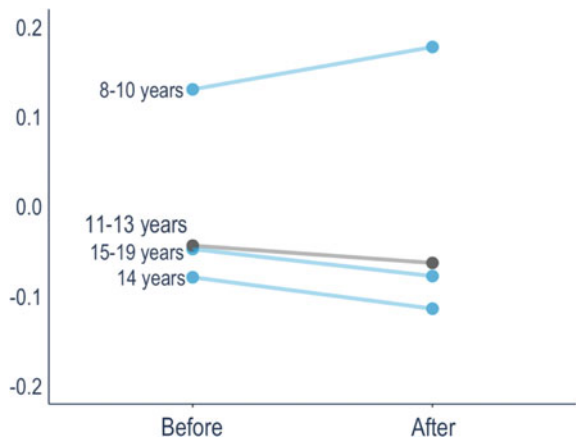
Assessment of the change in wellbeing during the pandemic for groups of students with different amount of home possessions reveals alarming results. We found that in the group of students with comparatively low level of home possessions there was a significant decrease in wellbeing during the pandemic ( $t = 2.42, p = 0.016$ ). On the other hand, students from families with middle and high levels of home possessions did not experience any significant changes in subjective wellbeing. This illustrates growing inequality between students from different families in the period of school closures (Fig. 9.5).

Among all other socio-demographic characteristics, only student age was significantly related to a change in wellbeing in the pandemic period. Younger students aged 8–10 years claimed a slight increase in subjective wellbeing after school closures ( $t = -5.27, p = 0.000$ ). At the same time, students from 11 to 14 years old had significantly lower results on the subjective wellbeing scale after school closures ( $t = 3.34, p = 0.001$  and  $t = 2.98, p = 0.003$ ). In addition, no significant changes in subjective wellbeing were found for students aged 15 years and older (Fig. 9.6).

**Fig. 9.5** Student subjective wellbeing in families with different amount of home possessions

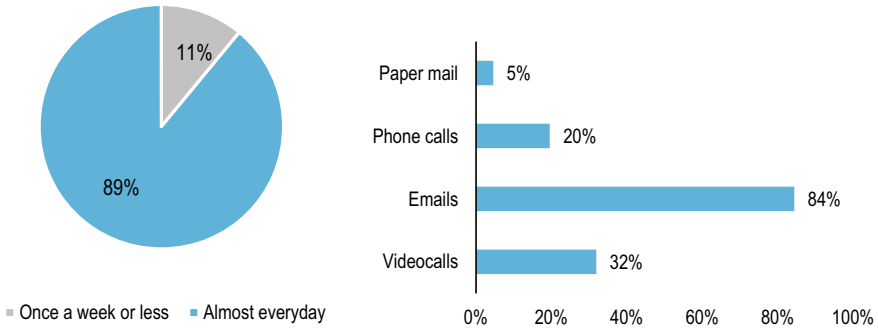


**Fig. 9.6** Student subjective wellbeing for different age groups

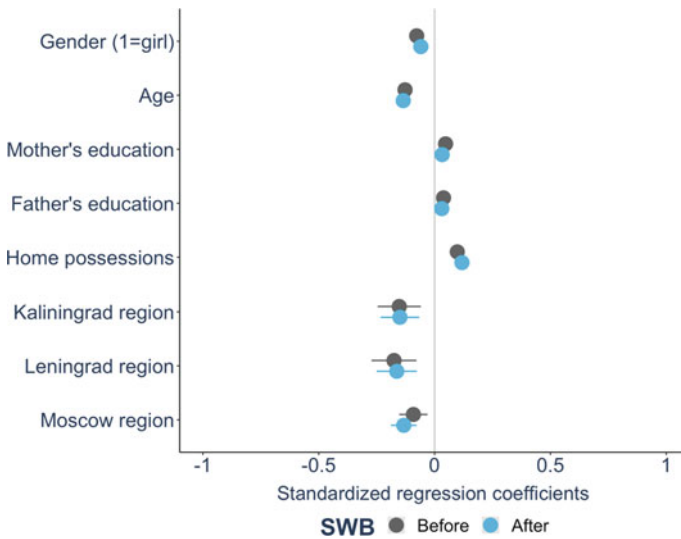


As for communication with school, it appears that about 11% of all students lost almost all contact with their schools. Only 89% of respondents stated that they received messages from school almost every day. Other students received messages from school once a week or even less. Of all the means of communication with students, schools used emails most often (84%). In addition, 32% of students claimed that they communicated with school by video calls (Fig. 9.7).

Our study of factors contributing to student subjective wellbeing showed that school characteristics did not play a key role in the state of children. No school characteristic (school resources, student body, area) had a significant connection with the subjective wellbeing of students if individual and regional factors were included in the model. Significant individual characteristics both before and after school closures



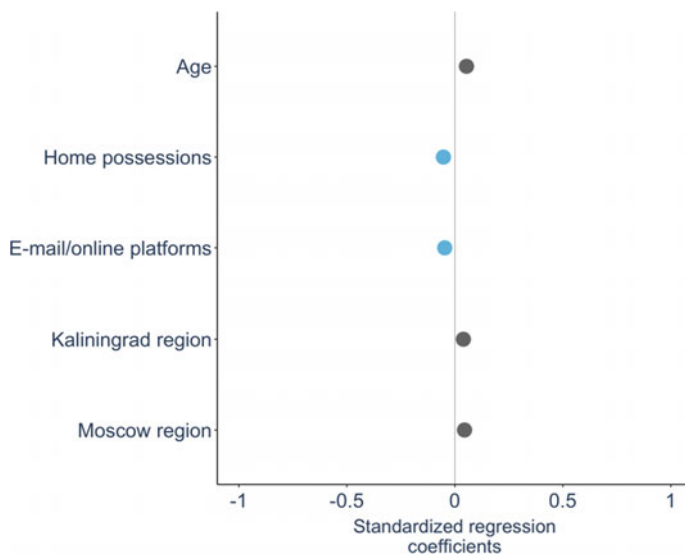
**Fig. 9.7** Communication with school



**Fig. 9.8** Factors of student subjective wellbeing before and after school closures

included gender, age, parents' higher education, and home possessions (e.g., car, television, computer, air conditioner, etc.) (Fig. 9.8).<sup>2</sup> Girls had a lower level of subjective wellbeing than boys; the same was true for older students in comparison to younger. At the same time, the parents' education and the number of home possessions had a positive relationship with the subjective wellbeing. The region in which the student lives also had an effect: the subjective wellbeing of students in the Tyumen Region was higher than in other regions both before school closures and in the winter of 2020.

<sup>2</sup>The graph includes only significant variables in the regression analysis.



**Fig. 9.9** Factors of the change<sup>3</sup> in student subjective wellbeing since school closures

<sup>3</sup> The change was measured as SWB before school closure minus SWB after school closure.

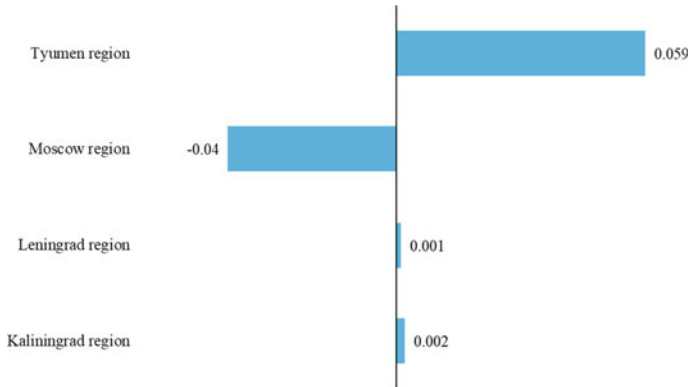
Our analysis confirms the results of prior SWB studies. In particular, our findings that primary school students had higher subjective wellbeing than older students before and after school closures, while boys sustainably felt better than girls, are consistent with recent major studies of student subjective wellbeing (Lampropoulou, 2018).

Measurements of the level of SWB since the closure of schools show that subjective wellbeing had fallen less for students with numerous home possessions (Fig. 9.9).<sup>4</sup> Another important factor is student interaction with schools during the absence of face-to-face learning: students who received information from their school by email or through online platforms showed a more stable level of subjective wellbeing. At the same time, the older the student, the more his or her subjective wellbeing decreased over the period in question. With regards to regional differences, the greatest changes in SWB were observed in the Kaliningrad and Moscow Regions while the least changes were observed in the Tyumen Region.

Finally, we made a comparative analysis of the level of student subjective wellbeing in 4 regions after school closures while controlling significant individual factors of wellbeing (gender, age, parents' education, home possessions) as well as the level of subjective wellbeing before school closures (Fig. 9.10). The inclusion of covariates into the analysis helped to identify differences that arose between regions during the absence of face-to-face learning and that were not connected with the

<sup>4</sup>The graph includes only significant variables in the regression analysis.





**Fig. 9.10** Factors of student subjective wellbeing since school closures

individual characteristics of student families and their level of subjective wellbeing before school closures. Our analysis showed that a significantly high level of wellbeing was observed in the Tyumen Region during the period of the survey. Other regions had a lower (and roughly similar) level of student subjective wellbeing (with corrections for student individual characteristics).

Can schools help to overcome the instability of subjective wellbeing during distance learning? Our analysis shows that they do have some levers at their disposal. The use of online platforms by schools to communicate with students studying at a distance is correlated with higher SWB stability during the pandemic. This measure is simple to implement. At the state level, one must elaborate commonly accepted protocols for the interaction between schools and students during emergency situations such as the COVID-19 pandemic. There is also a need for programs for developing social skills and skills for coping with emotions. In the context of current problems and difficulties, such programs are particularly urgent (during both school closures and the return to “normal” life) (Lampropoulou, 2018).

Looking at the broader research and policy context, it would also be important to study the impact of national factors on student subjective wellbeing. Another area is quasi-experimental studies of the connection between the wellbeing of adults and the wellbeing (or even the presence) of children. It has been shown already that the pandemic has had, on average, a negative impact on the SWB of all families and that, moreover, these effects differ for families with and without children (Möhring et al., 2020).

## 9.6 Discussion and Conclusions

The pandemic in Russia has highlighted the problem of the digital gap and, more broadly, educational poverty—the set of differences between children’s study conditions connected with their family’s place of residence (internet access, quality of telecommunications), material status (computer, workplace, ability to pay for internet and telecommunications), cultural capital, and involvement in education (ability to offer assistance). Children from low-income and multi-child families were the most affected.

While inequality is one of the main issues on the international agenda of education research and policy, it has been largely neglected by the Russian government over the years. The pandemic has opened the eyes of politicians and society to what they had mostly overlooked in the past: differences between children in the conditions of study connected to the family place of residence, cultural capital, and involvement in education. This connection has become more apparent during the pandemic than in “normal” conditions, leading to a more widespread understanding of the existence and impact of such inequalities on “normal” life. As it turned out, the education system did not know whom it was working with in particular, it disposed of no information or data on student and family categories that would allow it to identify and support groups at risk quickly. Whereas countries such as Australia, New Zealand, and the USA allowed children who could not get the proper care and supervision at home to continue to attend school, Russia did not have any initiatives remotely similar.

Several studies have already shown that the pandemic has broadened the knowledge gap between children with different socioeconomic statuses (SES) (Engzell et al., 2020). Our study demonstrates that the same thing is happening with respect to SWB during school closures. Students from low-SES families not only had lower level of SWB before school closures, but also experienced a significant decline during quarantine. This indicates that children with fewer home possessions have been more affected by the pandemic in comparison to their more advantaged peers. Policymakers may think that this problem can be simply solved by allocating distance learning technologies to children from disadvantaged families. Nevertheless, these mechanisms are a lot more complex, and the problem cannot be simply solved by distributing laptops (as California did during the transition to online learning) (Bravo, 2020).

While some measures were implemented for equalizing education opportunities during the pandemic, they were far from exhaustive. It is important that the interests of disadvantaged students and schools remain at the center of attention of federal and regional governments. Building a system for identifying and supporting children at risk of academic failure (including extra financing for schools where such children study, target work with families, remedial education programs, etc.) is vital for the future of Russian general education.

The pandemic has also highlighted the role of parents in education. The introduction of a lockdown in April led many parents to work online at home as well as to help

their children to study. Many parents were ill prepared for this challenge. The School Barometer survey asked parents, “How well did you manage to combine work, your children’s studies, and ordinary life while staying at home during self-isolation?” The mean response amounted to 3.6 points (on a 10-point scale with 1 corresponding to “very poorly” and 10 to “very well”) (Isaeva et al., 2020b). Domestic conflicts flared out, and fatigue and psychological discomfort grew. As a result, parents began to protest about the distance learning format during the pandemic and its use in the future.

At the same time, during the distance learning period some parents (especially from the urban middle class and above) saw the need to take a more conscientious attitude to their children’s education and choice of study trajectories by hiring tutors and selecting online platforms; they are planning to do so in the future, too. The experience of the pandemic also showed that school is not the only place where education can take place, and that distance learning has clear advantages in certain areas (such as allowing individuals to study and have greater opportunities for independent work). This has motivated many families to switch to home education.

The difficult interactions between parents and schools, their mutual distrust, and their attempts to put the blame and responsibility on each other were important lessons of the pandemic. Russian general education clearly needs a new model of interaction between schools and parents with a distribution of responsibilities and mechanisms of mutual assistance and parent education.

During the pandemic, radical changes occurred in the work of teachers and their relations with other education stakeholders. The load on teachers greatly increased during the distance learning period due to the need to master online resources and tools, make additional preparations for class, consult students and parents, etc. The existing model of regulating labor relations also showed limitations, in particular, in such aspects as overtime work, wages (including compensating the costs of employing one’s own equipment and using outside services), and salary incentives. At the same time, no teacher protests coordinated by labor unions took place in Russia in contrast to other countries. Russian schools need a new type of contract with teachers that would combine modern standards for professional competences and optimal working conditions.

The experience of transforming general education during the pandemic was also highly informative for the education management system. The pandemic made it clear that the federal government did not dispose of sufficient levers to assure equal opportunities of full-fledged schooling in all Russian regions. There were useful regulatory and curricular documents, recommendations, and initiatives at the federal level. Nevertheless, problems were mostly solved at the regional and municipal levels, which differed in their available resources, management potential, and accumulated experience.

The lack of a pro-active stance in most Russian regions, municipalities, and schools with regards to anti-coronavirus disease measures is an evident problem of Russian education. In some regions, education managers took a more active stance by looking for new solutions. Nevertheless, most of them began to go beyond traditional measures and offered creative solutions only after understanding that the pandemic

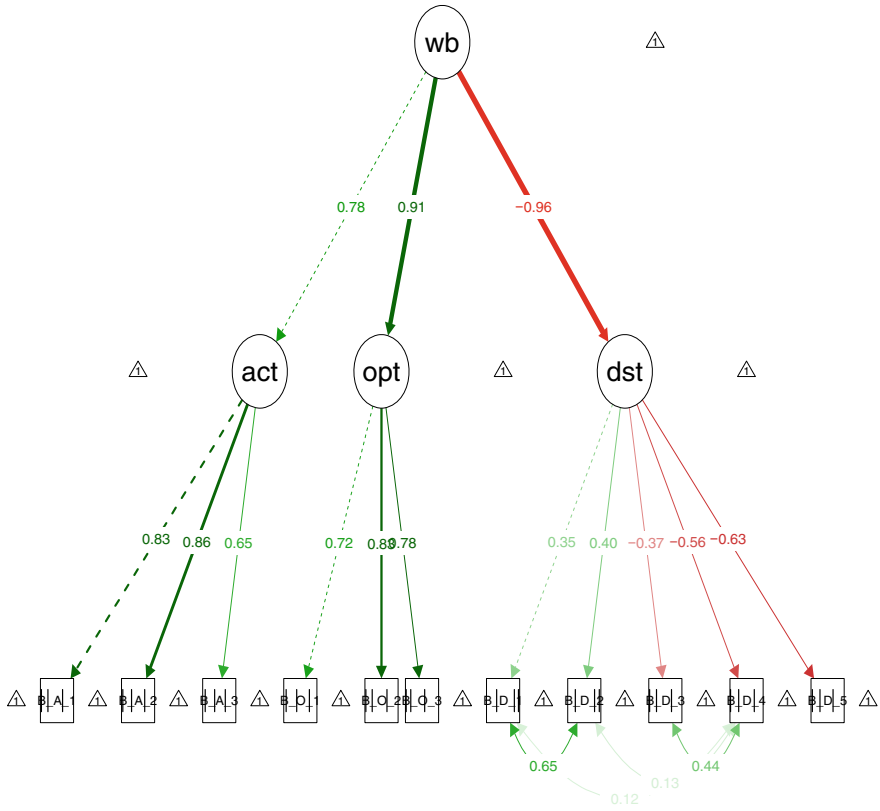
would continue for a long time. It was only then that they stated that the distance learning format would remain in effect until the end of the school year.

Far from simply implementing federal initiatives and meeting preset indicators of effectiveness, successful regions took individual approaches and launched their own initiatives in which education was embedded into socioeconomic policy. Regions with less initiative that managed education on a day-by-day basis without a global strategy, simply reacting to federal initiatives, were much worse off. The interaction between different levels of education management during the pandemic shows that regions with a lot of initiative should be given extensive freedom in the use of federal resources for digitization. Instead of trying to control all processes, the federal government should let regions, municipalities, and schools take the initiative and build their own horizontal ties. Unified solutions should be implemented with the help of a mechanism of target support aimed at reducing interregional differentiation.

Another major new international trend of education management is to base managerial decisions on a broad range of educational and contextual data, including data that has not been used up until now. This data comes from the domains of healthcare, culture, finances, and demographics. The publication and analysis of such data has led to the emergence of a new field that may be called “evidence-based education,” which is analogous to the field of evidence-based medicine. Some management models (e.g., the model of online extracurricular education) can be implemented only after analyzing certain indicators and sets of indicators. Unfortunately, no such transition has occurred in Russian education so far. In contrast to many other countries, Russia has published no open statistics about the incidence rate of the pandemic among school-age children that could serve as guidelines for converting schools to distance learning, nor has it conducted detailed studies of losses in education quality.

Decisions on organizing the work of the education system in the conditions of the COVID-19 pandemic were made in conditions of considerable uncertainty about the nature of the disease, the magnitude of the risks, and the role of schools and students in spreading the infection as well as about the impact of school closures on the quality of education and the wellbeing of children. Our analysis shows that this uncertainty existed in Russia both during the initial stage of the pandemic and during the period between the first and second waves. Its impact on losses in education quality and student wellbeing has yet to be determined. Nevertheless, a key lesson of the pandemic is that one must learn to plan in the conditions of continued uncertainty to implement both education response and education recovery measures. One must keep track of the growing experience in this domain in the country and the world particularly with regards to the effectiveness of education response and education recovery in Russian regions and other countries.

Building an evidence-based education management system for effectively responding to the challenges of the current pandemic and possible similar challenges in the future with the help of digital instruments should become a national priority. This would greatly simplify the work of schools in the event of a new wave of COVID-19 as well as solving the problems that flared out in 2020 before they become endemic.



**Fig. 9.11** Results of hierarchical confirmatory factor analysis (Subjective wellbeing before school closures in the spring of 2020)

### Appendix 9.1

WLSMV algorithm;  $\chi^2 = 857.248$ ;  $df = 37$ ;  $p = 0.000$ ; CFI = 0.98; TLI = 0.98; RMSEA = 0.05; 90% confidence interval [0.052; 0.058]; SRMR = 0.03 (Fig. 9.11).

### Appendix 9.2

WLSMV algorithm;  $\chi^2 = 1186.103$ ;  $df = 37$ ;  $p = 0.000$ ; CFI = 0.99; TLI = 0.98; RMSEA = 0.06; 90% confidence interval [0.062; 0.068]; SRMR = 0.035 (Fig. 9.12).

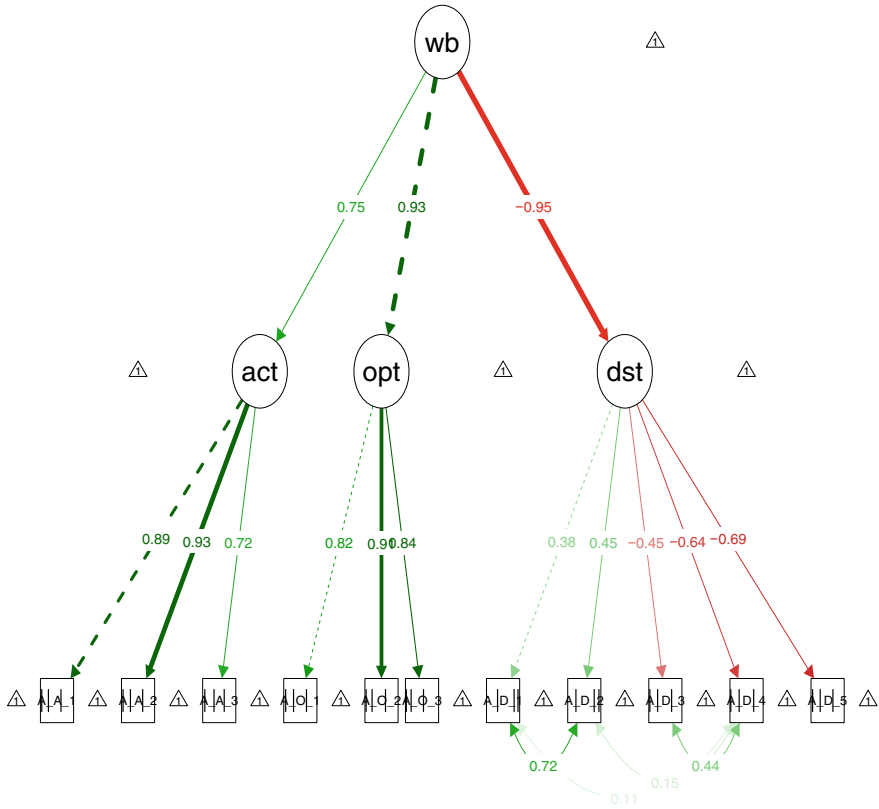


Fig. 9.12 Results of hierarchical confirmatory factor analysis (Subjective wellbeing at the time of the survey in November–December 2020)

### Appendix 9.3

See Table 9.2.

### Appendix 9.4

See Table 9.3.

### Appendix 9.5

See Table 9.4.

**Table 9.2** Results of multilevel regression modelling for SWB before school closures

Predictor	Beta	CI	Beta	CI	Beta	CI
<i>School characteristics</i>						
School area (city = 1)			-0.03 (0.05)	-0.12 to 0.07	-0.04 (0.04)	-0.13 to 0.05
Share of teachers with higher qualifications			0.07 (0.04)	-0.01 to 0.16	0.07 (0.04)	-0.02 to 0.15
Computers with internet (per student)			0.01 (0.04)	-0.07 to 0.08	0.01 (0.03)	-0.06 to 0.07
Student body			-0.11* (0.06)	-0.22 to -0.00	-0.07 (0.05)	-0.18 to 0.03
<i>Individual characteristics</i>						
Gender (1 = girl)			-0.08*** (0.01)	-0.10 to -0.05	-0.08*** (0.01)	-0.10 to -0.05
Age			-0.13*** (0.01)	-0.15 to -0.10	-0.13*** (0.01)	-0.15 to -0.10
Mother's education			0.05*** (0.01)	0.02-0.07	0.05*** (0.01)	0.02-0.07
Father's education			0.04** (0.01)	0.01-0.06	0.04** (0.01)	0.01-0.07
Home possessions			0.10*** (0.01)	0.07-0.12	0.10*** (0.01)	0.07-0.12
<i>Regions (reference group = Tyumen Region)</i>						
Kaliningrad region					-0.15** (0.05)	-0.25 to -0.06
Leningrad region					-0.18*** (0.05)	-0.27 to -0.08
Moscow region					-0.09** (0.03)	-0.15 to -0.03
Random effects						
$\sigma^2$	0.30	0.27	0.27			
$\tau_{00}$	0.04 <sub>school</sub>	0.04 <sub>school</sub>	0.03 <sub>school</sub>			
ICC	0.12	0.14	0.11			
N	99 <sub>school</sub>	95 <sub>school</sub>	95 <sub>school</sub>			
Observations	7355	6100	6100			

(continued)

**Table 9.2** (continued)

Predictor	Beta	CI	Beta	CI	Beta	CI
Marginal R <sup>2</sup> /conditional R <sup>2</sup>	0.000/0.124	0.048/0.181	0.068/0.170			
AIC	12,131.445	9658.337	9657.874			
Log-likelihood	-6062.721	-4817.143	-4813.898			

\* p < 0.05 \*\* p < 0.01 \*\*\* p < 0.001



**Table 9.3** Results of multilevel regression modelling for SWB after school closures

Predictor	Beta	CI	Beta	CI	Beta	CI
<i>School characteristics</i>						
School area (city = 1)			-0.04 (0.05)	-0.13 to 0.05	-0.06 (0.04)	-0.14 to 0.02
Share of teachers with higher qualifications			0.02 (0.04)	-0.06 to 0.10	0.04 (0.04)	-0.03 to 0.12
Computers with internet (per student)			0.01 (0.03)	-0.06 to 0.07	0.01 (0.03)	-0.05 to 0.07
Student body			-0.11* (0.05)	-0.22 to -0.01	-0.07 (0.05)	-0.16 to 0.02
<i>Individual characteristics</i>						
Gender (1 = girl)			-0.06*** (0.01)	-0.08 to -0.04	-0.06*** (0.01)	-0.08 to -0.04
Age			-0.13*** (0.01)	-0.16 to -0.11	-0.14*** (0.01)	-0.16 to -0.11
Mother's education			0.03* (0.01)	0.00-0.06	0.03* (0.01)	0.01-0.06
Father's education			0.03* (0.01)	0.00-0.06	0.03* (0.01)	0.00-0.06
Home possessions			0.12*** (0.01)	0.09 - 0.14	0.12*** (0.01)	0.09-0.14
<i>Regions (reference group = Tyumen region)</i>						
Kaliningrad region					-0.15*** (0.04)	-0.23 to -0.07
Leningrad region					-0.16*** (0.04)	-0.25 to -0.08
Moscow region					-0.13*** (0.03)	-0.19 to -0.08
<i>Random effects</i>						
$\sigma^2$	0.43	0.39	0.39			
$\tau_{00}$	0.05 <sub>school</sub>	0.05 <sub>school</sub>	0.04 <sub>school</sub>			
ICC	0.11	0.12	0.08			
N	99 <sub>school</sub>	95 <sub>school</sub>	95 <sub>school</sub>			
Observations	7355	6100	6100			

(continued)

**Table 9.3** (continued)

Predictor	Beta	CI	Beta	CI	Beta	CI
Marginal R <sup>2</sup> /conditional R <sup>2</sup>	0.000/0.112	0.048/0.164	0.071/0.149			
AIC	14,773.031	11,856.044	11,845.523			
Log-likelihood	-7383.514	-5915.996	-5907.722			

\* p < 0.05 \*\* p < 0.01 \*\*\* p < 0.001

**Table 9.4** Results of multilevel regression modelling for the difference in SWB before and after school closures

Predictor	Beta	CI	Beta	CI	Beta	CI	Beta	CI
<i>School characteristics</i>								
School area (city = 1)			0.02 (0.02)	-0.02 to 0.05	0.03 (0.02)	-0.01 to 0.06	0.03 (0.02)	-0.00 to 0.07
Share of teachers with higher qualifications			0.01 (0.02)	-0.02 to 0.05	0.01 (0.02)	-0.02 to 0.05	0.02 (0.02)	-0.02 to 0.05
Computers with internet (per student)			-0.00 (0.02)	-0.03 to 0.03	-0.01 (0.02)	-0.04 to 0.02	-0.01 (0.02)	-0.04 to 0.02
Student body			-0.00 (0.02)	-0.04 to 0.04	-0.01 (0.02)	-0.04 to 0.03	-0.01 (0.02)	-0.05 to 0.03
<i>Individual characteristics</i>								
Gender (1 = girl)			-0.01 (0.01)	-0.03 to 0.02	-0.01 (0.01)	-0.03 to 0.02	-0.01 (0.01)	-0.03 to 0.02
Age			0.05*** (0.01)	0.02-0.07	0.05*** (0.01)	0.02-0.08	0.05*** (0.01)	0.03-0.08
Mother's education			0.01 (0.01)	-0.02 to 0.04	0.01 (0.01)	-0.02 to 0.04	0.01 (0.01)	-0.01 to 0.04
Father's education			0.01 (0.01)	-0.02 to 0.03	0.00 (0.01)	-0.02 to 0.03	0.00 (0.01)	-0.03 to 0.03
Home possessions			-0.05*** (0.01)	-0.08 to -0.03	-0.06*** (0.01)	-0.08 to -0.03	-0.05*** (0.01)	-0.08 to -0.03
Communication with school: video calls							-0.03 (0.01)	-0.05 to 0.00

(continued)

Table 9.4 (continued)

Predictor	Beta	CI	Beta	CI	Beta	CI	Beta	CI
Communication with school: emails and online platforms							-0.05*** (0.01)	-0.07 to -0.02
Communication with school: phone calls							0.01 (0.01)	-0.02 - 0.03
<i>Regions(reference group = Tyumen Region)</i>								
Kaliningrad region					0.04* (0.02)	0.01 to 0.07	0.04* (0.02)	0.00-0.07
Leningrad region					0.03 (0.02)	-0.01 to 0.06	0.02 (0.02)	-0.01 to 0.06
Moscow region					0.05** (0.01)	0.02-0.07	0.04** (0.02)	0.01-0.07
<i>Random effects</i>								
$\sigma^2$	0.20	0.19	0.19	0.19				
$\tau_{00}$	0.00 <sub>school</sub>	0.00 <sub>school</sub>	0.00 <sub>school</sub>	0.00 <sub>school</sub>				
ICC	0.01	0.00	0.00	0.00				
N	99 <sub>school</sub>	95 <sub>school</sub>	95 <sub>school</sub>	95 <sub>school</sub>				
Observations	7355	6100	6100	6100				
Marginal R <sup>2</sup> /conditional R <sup>2</sup>	0.000/0.006	0.005/0.008	0.008/0.009	0.010/0.014				
AIC	8943.656	7397.948	7408.224	7418.486				
Log-likelihood	-4468.826	-3686.948	-3689.072	-3691.187				

\* p < 0.05 \*\* p < 0.01 \*\*\* p < 0.001

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**Sergey Kosaretsky** Director of the Pinsky Centre for General and Extracurricular Education, Institute of Education, National Research University Higher School of Economics, Moscow. PhD in educational psychology. He is an expert in the field of inequity in general and extracurricular education, school effectiveness, educational reforms. He participated in projects of OECD, UNICEF, World Bank. He is a member of the Expert Council on Education Issues by the State Duma of the Federal Assembly of the Russian Federation.

**Sergey Zair-Bek** Leading Expert at the Pinsky Centre for General and Extracurricular Education, Institute of Education, National Research University Higher School of Economics, Moscow. He worked in the Ministry of education of Russian Federation as a Vice-director of the Department of Education Development from 2001 to 2006 and as an international expert of World Bank in Central Asia from 2008 to 2013. The main research interests are national educational policy and regional strategies for education reforms, institutional behavior of educational systems, management in education.

**Kersha Yuliya** Junior Research Fellow at the Pinsky Centre for General and Extracurricular Education, postgraduate student and lecturer at the Institute of Education, National Research University Higher School of Economics, Moscow. Yuliya works in the field of sociology of education. Main research interests are social inequality, stratification, and life-long trajectories.

**Roman Zvyagintsev** Junior Research Fellow at the Pinsky Centre for General and Extracurricular Education, postgraduate student and lecturer at the Institute of Education, National Research University Higher School of Economics, Moscow. The main research interests are educational inequality, school academic resilience, school effectiveness and educational poverty.

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# Chapter 10

## Science, Social Responsibility, and Education: The Experience of Singapore During the COVID-19 Pandemic



Oon Seng Tan and Jallene Jia En Chua

**Abstract** In this chapter we first outline how the pandemic unfolded before highlighting the key thinking and strategies Singapore adopted in policy responses towards the crisis. The two key principles of Singapore's approach, science, and social responsibility, contributed greatly to its success in handling the public health crisis. This chapter will elaborate on these principles and examine how these policies were carried out in the educational realm. We look at how Singapore relied on its strengths of proactive rational planning and execution to facilitate the transition to home-based learning (HBL) and the subsequent re-opening of schools. Concomitant with policies to address health and well-being for all students were strategies to ensure continuity of learning, student engagement, and innovation in the new learning environment. The use of online learning portals such as the Student Learning Space enabled all students from primary to pre-university levels to have equal access to quality curriculum resources. Professional development and preparation of teachers pertaining to facilitating new modes of learning were as important as implementation measures. Given the unexpected impact of the pandemic and the need for scalability there were also many challenges to ensure equitable access and holistic well-being for vulnerable groups of students. Looking forward, we discuss the implications of the pandemic on Singapore's education scene, such as how it elevated core issues related to curriculum, pedagogy, and design of learning environments. We talk about opportunities for some of these issues to be addressed in policy and research, and how doing so can better build an adaptable education system for the twenty-first century.

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O. S. Tan (✉) · J. J. E. Chua  
Centre for Research in Child Development, National Institute of Education, Nanyang  
Technological University, Singapore, Singapore  
e-mail: [oonseng.tan@nie.edu.sg](mailto:oonseng.tan@nie.edu.sg)

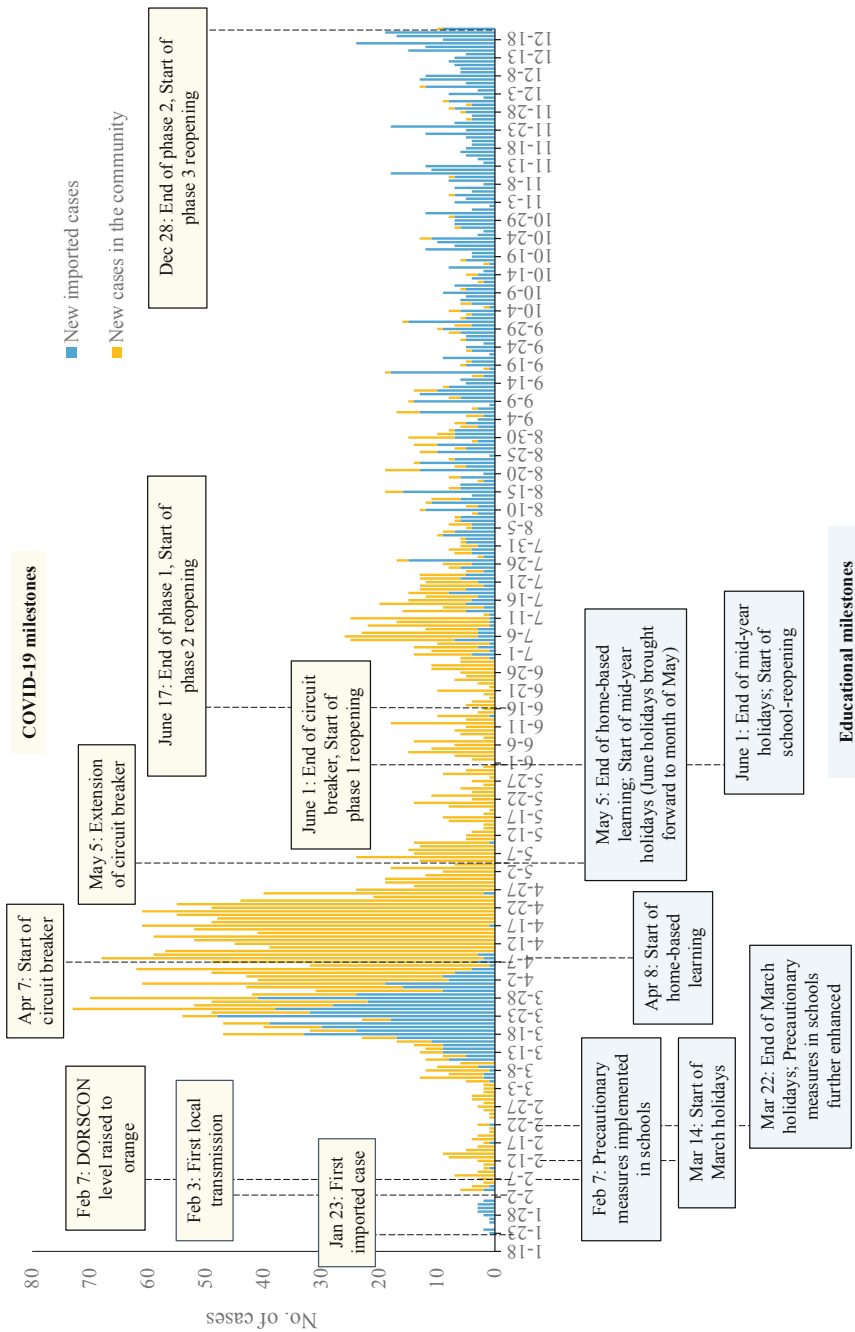
J. J. E. Chua  
e-mail: [jallene.chua@nie.edu.sg](mailto:jallene.chua@nie.edu.sg)

## 10.1 Introduction

Singapore is a small island nation with an estimated population of 5.7 million people. Being a small country, it is governed by a central government and thus policies and measures are often applied consistently nationwide. As a combination of a public health crisis, an economic recession, and a prolonged period of social isolation (Golberstein et al., 2020), the COVID-19 pandemic has taken a toll on Singapore's economy, disrupted many Singaporeans from their regular routines, and brought about physical, mental, and financial challenges for many. However, Singapore's policy response to the crisis has been noteworthy, and widely lauded to have been prompt and resilient, yet flexible. By January 2021, Singapore had announced the implementation of Phase 3 (Ministry of Health, 2020), the third and last phase of the reopening of Singapore's businesses and public spaces ever since the country exited its lockdown phase in June 2020. In this chapter, we discuss the key principles of Singapore's policy response to the crisis highlighting science and social responsibility, and further examine how these principles were applied to policies in the educational context. We then discuss challenges, implications for the education system, and opportunities for research and policy.

## 10.2 Unfolding of the COVID-19 Pandemic in Singapore

This section provides some context of the COVID-19 pandemic timeline unfolding in Singapore in 2020 (see Fig. 10.1). Singapore's first imported COVID-19 case (a 66-year-old Chinese national) was reported on January 23, 2020, followed by a couple more imported cases in the following days. At this point in time, locals went about their daily lives as per usual, with little concern of the threat of the virus as there was still no evidence of transmission within the local community. Only after local transmission was first reported on February 3 did the COVID-19 pandemic start to reach national attention in Singapore. On February 7, Singapore raised its national risk assessment level, known as the Disease Outbreak Response System Condition (DORSCON) level, from "yellow" to "orange" to alert of the possibility of a local pandemic. This led to heightened public awareness of the virus, and triggered reactions of fear such as panic buying at supermarkets to stock up on necessities. In late March, many Singaporeans abroad returned home, causing a spike in imported cases. This was followed by a massive outbreak in foreign workers' dormitories and a fast-increasing number of new and unlinked community cases. In response to this, the Singapore government carried out a stringent set of lockdown measures from April 7 to May 4, officially known as the "circuit breaker". The circuit breaker was subsequently extended for another four weeks to June 1. During the circuit breaker, all schools and non-essential workplaces were closed, and all gatherings with family or friends who did not live together were banned.



**Fig. 10.1** Timeline and Milestones of the COVID-19 Pandemic in Singapore. *Note* Information for daily statistics was retrieved from 2020 data published by the Ministry of Health (MOH). Cases in foreign worker dormitories are not reported here

After the circuit breaker, Singapore slowly moved towards reopening of workplaces, schools, and businesses via three phases. Phase 1 of reopening lasted for about three weeks, where some activities beyond the essential services were allowed to resume progressively (e.g., hairdressing services beyond haircuts, bookshops, and motor vehicle servicing). Phase 2 lasted for about 6 months and allowed for dining in with a 5-person limit, as well as the reopening of other services like retail. On December 28, Singapore transitioned into its third and final phase of reopening, increasing the public gathering and home visiting limit from 5 people to 8. The government also introduced free vaccinations for all Singaporeans and long-term residents.

### **10.3 Operating on Science and Government-Wide Approach**

Taking a government-wide approach entails different ministries coming together to achieve policy coherence and synergy. Using such an approach, Singapore's priorities during the crisis were to protect the lives of all citizens and to ensure economic livelihood and future readiness. Singapore's stance and approach towards handling the COVID-19 pandemic have been based on two key principles: science and social responsibility. First, management of the crisis was driven by science, where implementation of any policies and measures was informed by data and scientific evidence. For example, the science of infectious diseases tells us about the danger of virus non-containment, where cases can increase at an exponential rate if uncontrolled. Thus, from the beginning, Singapore prioritized the health and safety of its citizens by being proactive and decisive with rolling out containment measures. As early as the start of January 2020, when news of the virus outbreak in Wuhan were first reported, Singapore had already begun screening measures at Changi Airport for incoming travelers from the region and issued health advisories for the general public. On January 31, Singapore was the first country in Southeast Asia to ban new visitors of any nationality with recent travel to mainland China. This demonstration of early preparation and precaution can be contrasted with many countries who did not start preparation until the virus had already entered their country.

Over the various stages of the pandemic, Singapore swiftly and decisively adapted to new changes in scientific evidence and information on the situation on the ground. As more was known about the transmission of COVID-19 itself, Singapore implemented measures based on such evidence. COVID-19 was found to be transmitted via respiratory droplets and close contact, thus Singapore established a deep cleaning campaign at public places called SGclean to minimize contamination, as well as introduced stringent isolation measures to minimize contact. When imported cases were on the rise, Singapore imposed stay-home and quarantine orders for incoming travelers, with strict penalties for non-compliance. When the number of unlinked community cases spiked, Singapore implemented the circuit breaker to prevent the

virus from spreading further within the community. After discontinuing the circuit breaker, the Singapore government remained cautious and methodical in its approach and reopened Singapore in deliberate phases that minimized mingling, keeping the number of cases under control. To accommodate the increased public movement after reopening, the government also implemented digital systems such as SafeEntry and TraceTogether to facilitate efficient contact tracing efforts. Later, COVID-19 was also found to present as asymptomatic in certain people, thus Singapore engaged in aggressive testing of high-risk populations (e.g., hawkers, early childhood staff, incoming travelers, foreign workers living in dormitories), successfully detecting asymptomatic cases (e.g., Toh, 2020; Yong, 2020) and significantly reducing the spread of the virus.

## 10.4 Emphasizing Social Responsibility

Singapore also emphasized the importance of social responsibility throughout the pandemic. Exercising social responsibility in this time meant ensuring the care and safety of others in the community. Many measures were based on this principle, where people who may be more vulnerable to contracting COVID-19 were given the protection or precautionary advice needed. For example, frontline workers were supplied with adequate virus protection like suits and masks, and the elderly were given priority shopping hours and queues at supermarkets to reduce their exposure in public. Social responsibility was also a consistent narrative used in laying out precautionary guidelines and rules for the public, such as maintaining one-meter distances, staying home when unwell, and always wearing masks—it was emphasized that these measures should be taken to protect our loved ones and others.

These principles of science and social responsibility were also at the heart of educational policies during the pandemic. Education in Singapore is centralized and governed by the Ministry of Education (MOE), where there are about 350 primary and secondary schools and a half of a million students enrolled. COVID-19 related measures implemented by the MOE were also driven by science and strongly aligned with those implemented and advised by the Ministry of Health (MOH). This was made possible by the highly centralized political model on which Singapore operates, where all government ministries have a strong line of communication with each other, allowing for swift and consistent implementation across the health and education sectors. As one of the smallest nations in the world, centralization works well and can be executed successfully in a coherent, government-wide manner. In comparison, contention between health and education responses were more prominent in other larger countries in this book (e.g., United States, Spain) and worldwide.

When Singapore's MOH raised the DORSCON level to "orange" on February 7, implementation of precautionary measures at multiple ministry levels followed promptly after. On the same day, MOE issued a press release to step up precautionary measures in schools (Ministry of Education, 2020e). Large group and communal activities such as assemblies, camps, and mass celebrations were to be suspended,

recess times in schools were to be staggered, and co-curricular activities or after-school programs could only continue in smaller groups. Any inter-school activities were also suspended. This was in the first term (quarter) of the academic year and these measures were set to be in place tentatively until the end of the March holidays, which is a week-long break in March for students after the first term.

After the March holidays, it was further announced that hygiene and precautionary measures in schools were to be enhanced. All co-curricular activities and inter-school activities continued to be suspended or deferred until further notice. All schools were to adopt cleaning and safe-distancing practices, such as fixed exam-style seating for Primary 3 students and above (where students sit individually with spaces in between their desks), and fixed group cluster seating for Primary 1 and 2. There were also wipe-down routines in classrooms and cafeterias as well as assigned seating and play areas in other parts of the schools. On March 24, a joint statement between MOE and the Ministry of Social and Family Affairs (MSF) was released to announce additional precautionary measures for younger students from preschool and primary school (Ministry of Education, 2020b); students staying in the same household as a person who had returned to Singapore from any country were to be placed on a 14-day Leave of Absence (LOA).

After the circuit breaker, school measures were also in line with the three phases of reopening. In Phase 1, only graduating cohorts from primary and secondary schools attended school physically from Mondays to Fridays, whereas students from other cohorts rotated weekly between home-based learning (HBL) and returning to school for lessons to reduce the number of students in schools at any one time. From Phase 2 onwards, all students returned to school from Mondays to Fridays. There was also resumption of PE lessons and co-curricular activities with the assurance that staff and students continue to strictly adhere to safety management measures.

These cautiously controlled measures of precaution and safety proved to be effective in protecting our students from contracting COVID-19. As of December 2020, only about 0.23% of COVID-19 cases in Singapore were children or adolescents aged 20 and below (Covid19 SG, 2020), of which none caught the virus from schools or institutes of learning. These cases mainly caught the virus from overseas or from household members who were overseas, suggesting that the LOA precautionary measure was indeed a sound policy and helped prevent further spread amongst younger students.

However, although children and young adolescents are less likely to contract COVID-19 or have their physical health directly impacted by the virus (Davies et al., 2020; Viner et al., 2020), they risk suffering major detriments to their learning and development during this time. Disruptions to learning, such as cancellations of classes, lectures, and national examinations, will put the education of affected students on hold for a long time. On a larger scale, this poses significant problems to logistics in subsequent years, such as catching up for all the missed lessons or having the size of two or even more cohorts sit for a national examination at once. Singapore was cognizant of such supply-chain shifts or unforeseen consequences of disrupted learning—not just for students themselves, but for the entire education system. Thus, on top of protecting the health and safety of students from the virus,

minimizing disruptions to learning was of the utmost importance. This emphasis was reflected in how strategies to ensure continuity of learning, student engagement, and innovation in the new learning environment were employed in conjunction with health and safety measures.

### **10.5 Minimizing the Loss of Learning and Seizing Opportunities for Teachable Moments**

One way Singapore and MOE helped to maintain continuity of learning for their students was through helping them and teachers ease into home-based learning (HBL) during the circuit breaker. Before the circuit breaker started, MOE had implemented one day of HBL a week for schools, in anticipation of the possibility of a nationwide lockdown and full-time HBL. This allowed schools to progressively transition to the online learning model, and for teachers and students to familiarize themselves with the system. This methodical process allowed for a gradual adjustment into full-time HBL instead of an instantaneous switch that could cause confusion, unpreparedness, and backlashes to students' learning. When the circuit breaker was announced to be extended for another month to June 1, the academic calendar was also readjusted to accommodate this change. The month-long mid-year school holidays, originally scheduled in the month of June every year, was brought forward to the month of May to coincide with the second month of circuit breaker. This helped to minimize any loss of learning days at school. Ultimately, Singapore students only missed about a month of physical lessons at school, and even so, learning was maintained through home-based and online means during this month. The education ministry also took the opportunities to prepare teachers with resources about the science of the COVID-19 virus and the importance of health and hygiene practices. Schools also capitalized on the principle of social responsibility and emphasized educating students on the need for social distancing, isolation of infected persons, and strategies of controls such as screening and contact tracing. These were also opportunities to build resilience and highlight exemplary care of others through responsibilities and courage.

### **10.6 Use of Technology: Student Learning Space**

In addition, Singapore utilized innovative tools to help sustain student engagement and motivation under significant changes to the learning environment and mode. With HBL, replicating the traditional classroom onto an online medium (e.g., video-recording lessons as if they were face-to-face) may seem contrived and may no longer be as effective or engaging. The biggest challenge here was the ability to capitalize on online tools to offer better learning opportunities for students (Ng, 2020). On this front, Singapore tapped into its pre-existing national online learning portal, the

Student Learning Space (SLS), as a learning and teaching platform for teachers and students during the circuit breaker.

SLS is a learning management system containing curriculum-aligned resources for various subjects and is made accessible to all teachers and students. On SLS, teachers can share relevant lesson resources and students can access them in a self-directed manner (Ministry of Education, 2020d). Students can approach various topics at their own pace and based on their own interests, encouraging personalized learning and greater student ownership. Resources also come in different forms, such as videos, animations, simulations, podcasts, and visual texts (Ministry of Education, 2020c). Using this wide variety of forms and additional tools on SLS (e.g., installing pop up questions to make students' thinking processes visible or embedding YouTube videos for demonstration), teachers can combine and curate resources in their preferred delivery, and customize them to students' needs.

Aside from lesson materials, testing materials like quizzes and activities are also available on the SLS, where students can self-assess their knowledge and obtain immediate feedback on their performance. Teachers can also monitor their students' progress on their learning and assessments, both at a class and individual level. This enables them to make informed decisions when providing targeted intervention to address any gaps in understanding. Thus, besides serving as a resource bank, SLS is also an adaptive and interactive platform that streamlines and enhances the distance-learning process by allowing customizability, individualized learning, and engaging exchanges between students and teachers.

SLS proved to be a useful tool for the HBL period during the pandemic. With many teaching resources such as lesson plans and curriculum resources already on SLS, it was easier for teachers to launch into online teaching without the need to transfer many physical materials themselves. SLS complemented the online video conferencing platforms teachers used to carry out online lessons such as Zoom and Google Meet, as well as external resources such as textbooks and workbooks, offering students a flexible learning experience that may be more engaging and effective in a home-based environment (Gov.sg, 2020; Teng & Ang, 2020). Nonetheless, teachers' IT savviness was a crucial factor for the success of SLS and HBL. This could not have been achieved without ICT being a significant component of the learning technologies that Singapore teachers are equipped with from pre-service to in-service professional development. In addition, ever since the SARS pandemic in 2003, schools scheduled their own e-learning weeks or activities yearly as a routine for teachers to re-acquaint themselves with educational technology and remain prepared in the event where virtual learning is needed. Thus, teachers were generally very equipped with the technological skills needed for virtual learning before COVID-19, making it easier to mount an initiative for home-based learning during the pandemic.



## 10.7 Professional Development and the Co-Sharing Teacher Community

Even so, Singapore ramped up e-learning professional development (PD) for teachers even further during the pandemic. From the moment Singapore had its first local case, the Academy of Singapore Teachers (AST) starting proliferating PD courses to provide support for teachers in navigating the digital space and implementing online HBL. Thus, on top of e-pedagogy guidance already offered to all teachers, AST increased the number of PD sessions on the MOE Student Learning Space to support teachers through this new challenge. Although e-learning has been part of Singapore schooling since SARS, the national circuit breaker during COVID-19 posed an additional unprecedented challenge for teachers that was not present during the SARS pandemic. During the SARS pandemic, school closures lasted for a maximum of 1 week, whereas during the height of COVID-19, school closure extended for a prolonged period of one month.

AST provided PD guidance on two main areas: planning and design, and creation of e-learning resources and packages. For the former, AST organized learning sessions, webinars, and workshops to guide teachers on how to plan for and design seamless school and HBL experiences for students. For example, webinars were organized for Mathematics teachers to share lesson planning examples that took HBL considerations such as student HBL readiness into account. For Science, workshops to design blended learning experiences that are seamless and meaningful for students were conducted, encouraging dialogue between participants so that they could share lesson ideas with each other and further refinements and enactments could be done with the guidance of facilitators. For Humanities, different ICT tools that could be used to enhance the learning experience were shared with and amongst teachers.

Similar courses were implemented to guide teachers in creating effective e-learning resources and packages. For Humanities, MOE hosted workshops to provide guidance to teachers to create e-lessons on the Student Learning Space, highlighting student engagement, effective assessment for learning, and depth of the subject. However, perhaps what is most valuable from these PD opportunities is the fact that it sparked creativity, community engagement, and the effective exchange of tips, advice, and support amongst teachers themselves. Many learning designers and teachers have come together to share how they design learning environments using ICT tools and have made their own creations available through open-source platforms for other teachers. For example, a group of teachers co-created a digital game undergirded by self-determination theory (Ryan & Deci, 2000) to support teaching of “Hypothesis Testing”, an A-Level Mathematics topic. The resource was made available for use to all teachers teaching A-Level Mathematics. For Science, members of Networked Learning Communities co-created and shared resources suitable for use for HBL. Teachers and professionals brought together by their passion for high quality education and continued learning for their students amidst challenging times was indeed a heartening sight.

## 10.8 Challenges of Learning for Vulnerable Groups

Despite efforts to create equal learning opportunities for all students during the pandemic, Singapore faced many challenges in ensuring equitable access for vulnerable groups of children. For example, during the circuit breaker and HBL period, fault lines in the digital space started to emerge between children from higher and lower socioeconomic status (SES) backgrounds. While the SLS was meant to be a platform for all students to have equal access to learning resources, some children from disadvantaged backgrounds did not have digital devices readily available in their homes to access the portal. For example, the Singapore Longitudinal Early Development Study (SG Leads) found that 44% of vulnerable families living in rental flats<sup>1</sup> do not have a computer or laptop at home, as compared to 4% for those from higher-SES families living in private properties. This figure is 54% and 11% respectively for tablets (Yeung, 2020).

Besides the availability of devices, there are also a variety of other factors that determine the extent to which students can reap the benefits of HBL, such as physical environment, parental skills, and connectivity issues (Lee, 2020). Even with digital devices, many low-income households also lacked the appropriate infrastructure and environment at home that are conducive for HBL. For example, many did not have their own Wi-Fi subscriptions at home, including 8% of families in rental flats (Yeung, 2020), or enough tables and chairs for all children to use, resulting in less ideal workspaces like the floor or kitchen. Many also had to share small spaces with other household members, which can be distracting and inhibit students from focusing. For example, rental flats are usually one or two rooms, with a small living space of 36 sq m to 45 sq m, yet 40% of SG Leads families living in rental flats have five or more household members squeezing within that small space (Yeung, 2020). Such space constraints may cause friction and impact children's concentration and learning. Another vulnerable group of students is children with special needs. Many require face-to-face support for behavioral, emotional, or learning needs, and thus many struggled during this time with absence of additional support. Children whose parents work in essential services also lacked caregiving and supervision during this period.

For such students who may fall through the cracks, Singapore was less prepared in terms of having measures already in place. This is possibly because of the quick and unexpected turn of events into a lockdown phase, and the pressing need for scaling up home-based education (i.e., preparing all students and teachers as a whole). Nonetheless, Singapore was quick to adapt and rolled out supportive measures once issues came to light. Children who did not have alternative care arrangements, or who might need additional school support such as access to digital devices or regular face-to-face engagement, were allowed to continue going to school during the circuit

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<sup>1</sup> In Singapore, families' SES can be roughly identified by their housing types. The most vulnerable families from low SES backgrounds live in rental units by the Housing Development Board (HDB), whereas the most advantaged families from high SES backgrounds live in private properties like condominiums and landed properties.

breaker and had adults available to supervise and support them. In addition, MOE loaned about 12,500 laptops or tablets to students, as well as 1,200 Internet-enabling devices to students who did not have enough devices at home for HBL (H. M. Ang, 2020). Some corporate telecommunications companies such as StarHub also sponsored students in need with free computer hardware and cables and Internet subscriptions (J. Ang, 2020). Primary and secondary school students on MOE's Financial Assistance Scheme (FAS) can also benefit from subsidies under the School Meals Program (SMP), which was originally set up to provide subsidies for meals purchased from the school cafeteria and consumed in school. During the circuit breaker period, these meal subsidies continued to be extended to these students regardless of whether they returned to school during this time (Ministry of Education, 2020a).

## 10.9 Lessons Learned and Future Implications

While the COVID-19 pandemic has been an unfortunate occurrence, there are silver linings and lessons that arose from the situation. Firstly, the pandemic has accelerated a shift in mode of learning, where many are starting to consider hybrid learning as a possible way of learning for the future. Hybrid learning combines online educational materials and opportunities for interaction online with traditional classroom-based instructional methods. To incorporate the "online" aspect into learning, the use of digital and online devices as tools is key. In general, there has been a lack of adoption of education technology solutions in schools in Singapore (Hutton, 2020). For example, although the SLS was implemented in 2018 and therefore existed before the pandemic, Singapore had never fully utilized it on a scalable basis; it was viewed more as an additional outlet for information rather than being integrated more extensively in day-to-day teaching and learning in school. Its extensive uptake and utilization were subsequently necessitated and expedited by the pandemic. This acceleration is also mirrored on the policy level, where the government has made plans to strengthen measures related to digital learning. For example, a government plan to roll out personal laptops or tablets for all secondary school students has been adopted seven years prior, to 2021 (Yuen, 2020). This is with hope of keeping social mobility alive, allowing all students to access and benefit from learning in the online and digital domains.

Secondly, the pandemic has also catalyzed a shift of the learning paradigm in Singapore from a more traditional one-size-fits-all approach, to one that is more differentiated and customized based on each student's learning needs, interests, and capabilities. This allows for learning and teaching that is more targeted and effective in fulfilling each child's specific potential. The blended learning model allows for flexibility in learning, especially during home-based components. Therefore, students who are excelling within the main curriculum can have independent time during home-based learning to learn about and pursue other things that pique their

interest. Materials and resources can also be recalibrated for students to target specific gaps in learning.

We envisage that the above shifts will translate into practical and policy implications in Singapore's education system in the future. We observed that education in Singapore generally tended to be rather conservative in adapting to the changes and demands of the twenty-first century. The pandemic catalyzed discussions to consider many of these potential changes as viable and have made people more accepting to embrace new ways of education. In June 2020, for example, Singapore's ex Minister of Education, Mr. Ong Ye Kung, voiced that HBL is set to be a regular part of schooling past COVID-19 (Davie, 2020), hinting at a shift towards hybrid or blended learning. Later, in December 2020, it was announced that secondary school and junior college students will spend 2 days a month doing HBL starting from the third term of 2021 (Ng, 2020). This signals that more educational shifts will be approaching. These shifts would not have been so quick to arrive without the pandemic. Because of the pandemic-initiated shifts, we speculate that many larger educational issues will arise both in Singapore and around the world, impacting different aspects of the education system such as curriculum, pedagogy, and structure. For Singapore, this may allow it to transform to be more aligned with the demands and trends of the twenty-first century.

### ***10.9.1 Curriculum***

Firstly, paradigm shifts in learning involve reconsidering curriculum design in new learning environments. Curriculum design in Singapore has its roots in the nineteenth century Industrial Revolution, where knowledge is largely taught within an analytical framework. Subjects are broken down into smaller modules and taught quite often in isolation or with little relation with each other in a check-list manner. Curriculum in Singapore should be redesigned to incorporate the connectivity and relativity between subjects, so that students at pre-university levels can understand how certain subjects and topics are interconnected, which will support learning at the university stage and beyond. For example, subjects that are interfaces between rudimentary subjects (e.g., biochemistry as an interface between biology and chemistry) can be introduced before university at primary and secondary levels, rather than solely at the university level. Interdisciplinary curriculum should be more pervasive within all levels of education.

The drive towards independent and self-directed learning also supports a shift away from the analytical framework. One of the goals of twenty-first century education is to instill the spirit of life-long learning, and the effects of the education system are meant to last for life. With this in mind, learning and its benefits will vary for everyone, and thus the standardized, module-based curriculum style of the analytical framework may start to lose relevance. At a conference by the Institute of Policy Studies in January 2021, Singapore's Education Minister Mr. Lawrence Wong raised a similar point aligned with this thinking. He mentioned that Singapore will make

fundamental shifts in its model of education and mindsets as part of post-pandemic plans, such as preventing “front-load learning when someone is young”, or treating “education as a conveyor belt for the job market” (Wong, 2021). This means that education should be viewed less as an end to secure a good job, but rather as a system to cultivate life-long learning habits and skills that are healthy, enjoyable, and beneficial for each student. The current analytical framework is less adept at doing this.

Instead, there is a need to retool curriculum design from a thematic approach, preparing students for society and the workforce as adults by instilling the skills and habits required. This is especially true since the requirements in the workforce have also evolved since the nineteenth and twentieth century. Rather than a strong emphasis on academic excellence, there is an even greater need for overarching skills like problem solving, critical thinking, and innovation. Apart from the core subjects and fundamental skill development, curriculum design should encompass the necessary skills and knowledge for students to take on larger, real world related issues in the future such as climate change, digitalization and automation, and artificial intelligence.

### ***10.9.2 Pedagogy***

Secondly, paradigm shifts also force us to reconsider pedagogical methods. Educational pedagogy in Singapore is still largely teacher-directed, despite some shifts towards student-oriented engagement and activities. Although research and theories in the past that focused on improving instruction and teaching from the teacher’s perspective were useful for effective didactics, new ecologies of learning are emerging where experiential and collaborative learning are even more important for developing twenty-first century skills. With the new learning environments, such as online learning or independent learning at home, pedagogical methods need to be much more facilitative and less didactical. Thus, it is likely that the education system will transform to incorporate and accept education that is more genuinely student-centered, where learning is highly personalized and flexible. Instead of having activities curated for them, students can create their own activities and direct their own learning based on their interests and strengths. This will also open opportunities for project-based and problem-based learning, where students direct their own learning with each other, and learn with and from one another. Teachers then take on design, facilitatory, and coaching roles rather than instructive ones.

### 10.9.3 Structure

Lastly, the structure of the academic or school life may also start to transform to be more fluid. Currently in Singapore, schools follow a fixed timetable and structure that students heed. For example, lessons are often organized in 40-min blocks. With the introduction of the hybrid learning model, the same structure in a physical, school setting might not be as replicable in the online realm. Thus, it is likely that while physical schooling may maintain some sort of structure and rigidity in its scheduling and planning to maintain order, adaptations need to be made when students are doing home-based, online learning, as the demands and environment are different at home. For example, it may be difficult for students to sit for 40-min blocks at home looking at a screen, as it is easier to disengage online than in real life. There are also fewer disciplinary agents at home as compared to in school.

Beyond our Singapore case and looking across cases in this book and worldwide, our postulation is that future shifts in the education systems around the world may embrace further structure, curriculum, and pedagogy changes which in some ways can be captured more broadly in Table 10.1, shown.

To accommodate these potential implications and transformations in the education system, research is required to ensure the smooth changes in curriculum, pedagogy, and academic structure. Initially, more research is required to understand learning in the online environment. In particular, it is crucial to answer key research questions revolving around students’ and teachers’ online learning and teaching behaviors and styles. For example, is there a deficit in learning when learning is done online? If

**Table 10.1** Our view of the potential educational shifts both in Singapore and globally post COVID-19

Type of shift	Pre COVID-19	Post COVID-19
Curriculum	Nineteenth century curriculum Legacy of Industrial Revolution with large amount of analytic content learning Subjects disconnected Curriculum fixed to tests	Twenty-first century curriculum Analytical, big picture, and generative thinking Integrative and connected learning Curricula cultivate deep learning and are attuned to real world skills and project accomplishments
Pedagogy	Twentieth century pedagogy Didactical teaching Little participation and self-direction Pedagogy fixed to teacher	Twenty-first century pedagogy Learning designed for engagement and self-direction Participatory learning Hybrid models of leaning and networked ecology of learning resources
Structure	Eighteenth century time-table format Fragmented learning Regimentation of schedule Students fixed to chair in class	Twenty-first century timetabling Thematic learning Immersive learning Flexibility of engagement

so, what are the mechanisms behind these deficits (e.g., engagement, motivation, lack of discipline)? Upon understanding the key mechanisms and outcomes, we can design online learning and tools that mitigate these. More research is also needed to test new pedagogical methods for teachers, considering the shifting role of the teacher from a didactic position to a more facilitatory figure. What is the best way to design the learning environment for students in these new environments? How do we prepare our teachers to do so? What are the skills and knowledge necessary for our teachers to become facilitators and designers rather than instructors? Teachers need to know new methods to engage students online, as well as be able to facilitate peer to peer discussions both online and offline as we move towards an increasingly project-based education style.

Ultimately, these movements in the education system need to be well supported by policy. Measures need to be in place to prepare for these movements. A couple of issues merit policy attention here. Firstly, with the widespread use of the internet and online tools, we need online infrastructure that is secure and accessible for all. Secondly, with possible changes to the way we perceive curriculum, pedagogy, academic structure, and learning environments in the future, there are needs for interdisciplinary experts beyond education to support these changes. We need to draw on the art and science of learning from education, psychology, neuroscience, and educational technology to understand how people learn best in differentiated situations and new environments. New policies, guidelines, practices, and measures need to be explored with participation and contributions from educators and students. As many parents and teachers are from older generations and are used to traditional education methods, there should be adequate guidance on how to transition into using digital devices and platforms, such as using workshops or community partnerships. Transitions should be as smooth as possible to alleviate anxiety and to motivate the public to accept and embrace these changes positively.

Lastly, education should not forget its narrative and promise for educating our future generations, which is that “no child is left behind”. For Singapore, the pandemic and HBL experiences have shown us that in the context of new learning environments, we are still inadequately prepared to support vulnerable groups of children to have equal access to learning opportunities. During the same conference mentioned above, Mr. Lawrence Wong also mentioned striving towards a fairer and more equal society as one of three “resets” we must adopt in post-pandemic Singapore (Wong, 2021). Regarding education, he endorsed the distribution of more resources to schools with a larger proportion of students from lower-income families or disadvantaged backgrounds (e.g., deploying more allied educators, such as counsellors and student welfare officers to support these students), as well as intervening early and uplifting children from birth and early childhood as key policy movements. We recommend that such policy movements should also consider the types of post COVID-19 education shifts that might happen. For example, shifts to online/digital media and home-based learning means that more disadvantaged children will have to assess education from their home environment, where background and family factors may start to matter a lot more, as compared to attending school physically where other support systems are in place. Policies should consider how professional

support can be best extended to disadvantaged students when they are learning from home.

Also important to note from a top-down approach is how the mental well-being of all children can be taken care of during such shifts to blended learning. During the circuit breaker, Tinkle Friend, a mental health helpline for primary school pupils received 208 more calls than the previous month, where many children were concerned with managing online schoolwork and losing their friends (Goh, 2020a). Similarly, Touchline, a helpline for youth-related issues experienced an increase in calls during the circuit breaker, and Limitless, a charity which helps youth with mental health issues, has also seen an increased demand for help (Goh, 2020b). Psychologists explain that children thrive on routine, so the disruptions brought about by the pandemic are stressful for many. Children and youth may also experience increased levels of anxiety related to COVID-19 issues, such as lack of personal space and family issues. While these trends were observed during the full-scale nationwide lockdown that has passed in Singapore, it is possible that mental health issues will continue to affect children and youth in Singapore in the future. The pandemic may be around for a long time, and the shifts towards the blended-learning model might further disrupt schooling routines or exacerbate issues of personal space and family issues when students stay at home for longer periods of time for home-based learning. There needs to be adequate systemic support to protect the well-being of our students and to help them through such shifts. From a long-term perspective, perhaps education needs to incorporate socio-emotional skills and awareness amongst students and encourage them to seek help if they face struggles within the home environment.

## 10.10 Conclusion and Remarks

In conclusion, Singapore's principles of science and social responsibility undergird a successful management of the COVID-19 pandemic, and the same principles were applied to the education system. Science informed measures to protect the health and well-being of students, and strategies to ensure continuity of learning and engagement were also executed in a scientific and methodical manner. In schools, teachers also emphasized the importance of social responsibility during COVID-19.

Altogether, we perceive that some of these successes can be due to the unique attributes of Singapore's governance, which contains centralization, multi-ministry coherence, and a legacy of evidence-based policymaking, all in which were especially useful during the COVID-19 crisis. Existing systems and the types of education that occur daily before the pandemic also made swift responses possible. One example



is how teacher education had already incorporated technological skill-building pre-COVID-19, as mentioned above. Another example is how the value of social responsibility is very much ingrained in our culture and total defense education,<sup>2</sup> such that citizens do perceive the importance of social responsibility measures during the pandemic. There is also a strong trust in authority and compliance to rules and measures.

Although there are limits to a total centralization approach, such as lacking eyes on the ground to support those who fall through the cracks, the Singapore model does not hope to become entirely centralized. Instead, it aims to be uniquely balanced in all areas. Our political model is a balance between authoritarianism and democracy, or freedom and social constraint. Similarly, we hope to achieve a balance between centralization and decentralization, such that as we can support the nation as a whole, we are also able to efficiently identify and support those that are most vulnerable. For example, MOE moved towards a cluster management of schools in 2006, which is a move towards decentralization, but improved efficiency in systems on the ground.

Nonetheless, the COVID-19 pandemic has left an indelible mark on our lives, generating long-term changes for society and education. To prepare for future transformations, Singapore has many struggles to overcome. However, a beneficial consequence of the crisis is that the pandemic has made many related issues visible and thus accelerated the shift of Singapore's education system to become more suitable for the twenty-first century. We anticipate that the same kind of changes will also surface more broadly in education systems globally.

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<sup>2</sup> Social Defense is one of the six pillars of Total Defense in Singapore. Social Defense emphasizes the need to build strong relationships across all groups in Singapore and the importance of staying strong and united during challenging times by looking out for each other without self-interest.

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**Oon-Seng Tan** is Director of the Centre for Research in Child Development, Nanyang Technological University, Singapore. He was a Chen Yidan Visiting Global Fellow at Harvard University in 2019. Professor Tan was the Director of the National Institute of Education (2014–2018) and previously worked at various levels of deanship and leadership in education where he saw the transformation of Singapore's education system. Professor Tan's expertise includes teacher education, leadership development, problem-based learning, and educational psychology. He has authored/edited more than 20 books and published over 150 scholarly articles in these fields. He is Lead-Editor of *Asia Pacific Journal of Education* (Routledge) and Editor-in-Chief of *Educational Research for Policy & Practice* (Springer). Professor Tan's keynotes include the National Science Foundation Distinguished Lecture, AERA Annual Meetings Presidential sessions, the Royal Swedish Academy of Science International symposium, and International Education Summits of Education Ministers. He has also been a consultant to World Bank, UNESCO, OECD, ADB and governments worldwide.

**Jallene Jia En Chua** is a Research Assistant at the National Institute of Education, Nanyang Technological University, Singapore. She obtained her Bachelor of Science in Psychology (First Class Honours) at the University College London, UK, and was conferred the Dean's List Award (Faculty of Brain Sciences) upon completion in recognition of her academic excellence. In 2018, she was the only recipient of the prestigious Professor Malcolm Grant Scholarship which allowed her to pursue a master's degree in Psychology of Education from the Institute of Education, University College London, United Kingdom. Her research interests focus on early childhood education, cognitive and social development in early childhood, parent-child interactions, as well as exploration and play.

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# Chapter 11

## The Spanish Response to the Covid-19 Pandemic: From Joint Governance to Lack of Governance



Javier M. Valle and Carlos de Olagüe-Smithson

**Abstract** On March 9, 2020, to safeguard the health of the population from the spread of COVID-19, the Autonomous Community of Madrid was the first region in Spain to suspend in person classroom activity from March 11th. Five days later, on March 14th, the Spanish government declared a state of emergency and in person classroom lessons were suspended throughout the country.

This chapter will analyze the Spanish national response to the pandemic, comparing the approaches of the 17 Spanish Autonomous Communities and focusing on the details of the first region to suspend classroom education, the Autonomous Community of Madrid, the capital.

In many cases, teachers and schools reacted quickly to try to maintain educational continuity for the students through self-instructional courses and procedures for distance learning. The public education administration did not promptly provide clear guidelines, in part due to the Spanish decentralized government structure. By April 2020, distance learning was already offered at most of schools.

In July 2020, the EvAU—the national state exam that provides access to university studies—was administered to students in person, following strict health care protocols including mandatory mask mandates, hand sanitizer at the entrance and exit of the classrooms, and a distance of 1.5 m between desks. The pandemic in Spain has fostered ICT skills in an unprecedented way. For example, teachers and students have embraced a new way of teaching and learning (with private platforms like Google Classroom and Microsoft Teams). This development of ICT skills and a new focus on competences appears to have changed Spanish education in a never-before-seen way and might have a long-term impact.

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J. M. Valle (✉)

Universidad Autónoma de Madrid, Ciudad Universitaria de Cantoblanco, 28049 Madrid, Spain

e-mail: [jm.valle@uam.es](mailto:jm.valle@uam.es)

C. de Olagüe-Smithson

IES Pedro de Tolosa, c/Estudios 1, 28680 San Martín de Valdeiglesias, Madrid, Spain

e-mail: [colaguesmithson@educa.madrid.org](mailto:colaguesmithson@educa.madrid.org)

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## 11.1 Introduction Organization, Structure, and Legal Framework of the Spanish Education System

After the dictatorship of Francisco Franco (1939–1978), Spain began a democratic process affecting all social and political domains. The education system, as part of this transformation, was reformed with laws proposed by different administrations representing different ruling parties and coalitions.<sup>1</sup>

With democracy established by the 1978 Constitution, it became essential to reform the system to align it with the new democratic political situation. These reforms, based on new constitutional values, opened the system to the principles of decentralization, democratization, and participation (Egido, 2005).

Before democratization, the educational system in Spain was one of the most centralized in Europe, but it was transformed to distribute the responsibility of education among the Central Government and the 17 autonomous regions—*Comunidades Autónomas*—(Autonomous Communities). According to the general framework of the central legislation, these territories have the authority to manage their respective region's educational system. Those territories which have an official regional language can use it as the language of instruction.

Many laws were oriented to modernize the educational system during the years after the approval of the 1978 Spanish Constitution. These laws were passed by different governments of the two main national political parties, advancing goals and norms of opposite orientation to guide the Spanish education system, which as a result experienced alternating changes introduced by administrations with different political orientations.

These education reforms began under the Socialist Party (1982–1996) with the University Reform Act (*Ley de Reforma Universitaria, LRU*) of 1983. This Act updated the Spanish University system and was based on three constitutional principles: the universal right to education, academic freedom, and the autonomy of universities. In 1985, the constitutionally recognized educational rights and liberties were regulated in stages, including tertiary education and University level by the Organic Act of Right to Education (*Ley Orgánica Reguladora del Derecho a la Educación, LODE*). This law attempted to democratize the management of educational institutions and establish school councils in educational institutions and autonomous communities, and at a national level. Furthermore, this law implicated one of the most repeated and controversial educational debates in Spain: the status, management, and funding of private schools. The Act upheld the right to create private educational institutions, which are private institutions that could receive public funding under certain conditions described in the law. As a result, private schools—mainly owned by the Catholic Church and culturally important since the nineteenth century—were among the academic institutions that could be financed by the State (Ossenbach, 1996). During the academic year 2019–2020, according to

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<sup>1</sup> Egido & Valle (2015) provide a detailed description of the recent history of education in Spain and summarize the main parts of its academic structure. An extended version of the following explanation can be found in the mentioned text.

official statistics regarding non-tertiary education, 5,381 out of 9,390 private schools were financed by the State, out of a total number of 19,149 schools.

In 1990, the transformations of the organization, administration, and management of the education system were complemented by the modification of the structure of all educational levels and their curricula by the Organic Act on the General Organization of the Educational System (*Ley Organica de Ordenación General del Sistema Educativo*, LOGSE). This law introduced an important structural change and a more flexible curriculum, inspired by the principles of constructivist educational theories. The law also extended universal compulsory education up to age sixteen, establishing a model with ten years of comprehensive education (de Olagüe-Smithson, 2019, p. 133).

At the beginning of the twenty-first century, the conservative party (*Partido Popular*) introduced another set of reforms to the educational system. The Organic Act on Universities of 2001 (*Ley Orgánica de Universidades*, LOU) repealed the University Reform Act (LRU) and regulated the structure and organization of the educational system at the university level. The Act on Vocational Training and Professional Qualifications of 2002 modified the LOGSE concerning these modalities of education. Also in 2002, the Organic Act on Quality of Education (*Ley Orgánica de Calidad de la Educación*, LOCE), modified both the LODE and the LOGSE. The objective of the LOCE was to increase the quality and the performance of education. However, this law was not implemented due to a change in government which took place in 2004.

Upon the election of the new socialist government (2004–2011) the law was modified again in 2006 through the Organic Act on Education (*Ley Orgánica de Educación*, LOE), which regulated the Spanish non-university educational system until December 2013. Additionally, the Organic Act on Universities was amended to align the Spanish university education with the European Higher Education Area (EHEA) in 2007 (Organic law 4 of April 12, 2007, which modifies Organic Law 6 of December 21, 2001).

## 11.2 The Current Educational System in Spain

After almost eight years of socialist government, the 2011 election gave the conservative party the absolute government majority. In December 2013, this new government approved the Act on the Improvement of the Quality of Education (*Ley Orgánica de Mejora de la Calidad Educativa*, LOMCE) to again modify the educational system. This law affected the levels below tertiary education, prioritizing the improvement of educational quality, the increase of youth employability, the modernization of vocational training, and the reduction of drop-out rates.<sup>2</sup> Although this Act intended to modify the LOE of 2006 only slightly, the measures were strongly criticized across

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<sup>2</sup> Early leavers' rate was 31% in 2002; it remains in 17% in 2019, far from the European Union target for under 10% by 2020.

different sectors. The Act had no broad political consensus and was only supported by the government's majority party. Most of the opposition parties opposed the law.

In December 2020, the coalition government of the socialists and communists elected in 2019 passed the new Act "*Ley Orgánica 3, 2020*" (BOE, 2020).

These frequent changes to the legal framework constitute one of the main challenges for educational policy in Spain: the lack of stability and continuity resulting from an elusive education consensus between the main political parties in Spain. The resulting short policy cycles are seen as a problem by different education stakeholders including teachers' and parents' associations, but also academics and specialized media. For example, the President of the Spanish Federation of Public Schools Principals' Associations said that they deeply regret the lack of consensus in passing the new law of education, and they encourage political parties and educational communities to work together to avoid more reforms without consensus in the future.<sup>3</sup>

The abundance of education laws since 1990 (and their corresponding regulatory developments) and the continuous legislative changes and lack of policy continuity have produced teacher fatigue and confusion for parents and society. While politics often influences educational changes, in the case of Spain, these political fluctuations have resulted in a failure to achieve a national consensus and stability for education. It has not been possible to consolidate a stable regulatory framework, nor permanent laws, and consequently there has not been steady education development (Antiñolo, Molina, & Pérez, 2014).

However, despite the proliferation of educational laws, some characteristics of the educational system have remained relatively stable; some of the guidelines for the progress of Spanish education have remained unchanged over the last few decades. Two among these help understand the Spanish educational response to the COVID-19 pandemic: (1) the educational administration model and (2) the overall organization of the different levels of education.

Concerning the school system administration model, powers and responsibilities are shared between the State and the Autonomous Communities. According to the Spanish Constitution, Article 139.1.30 (*Constitución Española, 1978*), the State is responsible for ensuring basic minimum program standards (curriculum and qualifications) across Spain and guaranteeing the educational rights of Spanish citizens. That is why the State plays the primary regulatory role on educational issues, but Autonomous Communities are uniquely responsible for the administration and organization of the educational system in their respective regions, save the powers reserved to the State. Autonomous Communities regulate school programs beyond the minimum structure and content determined by the State and handle school personnel, grants, and support services. Nevertheless, despite the changes meant to decentralize the educational system, local government authorities and individual schools play a limited role. Officially, schools have certain pedagogical, organizational, and managerial autonomy, but the decentralization process has not fully empowered these educational institutions. Spanish schools are characterized by

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<sup>3</sup> <https://www.europapress.es/sociedad/educacion-00468/noticia-directores-instituto-lamentan-falta-consenso-aprobacion-ley-celaa-congreso-20201119165259.html>.



limited autonomy, whereas most decisions are made by the educational administration. As a result, schools do not have the ability to effectively adapt to changing environments and policy priorities (Egido, 2005). In the pandemic context, schools have been paralyzed, without the autonomy to offer contextualized responses; they completely depended on the state and regional education authorities that offered slow and contradictory guidelines.

The structure of the educational system has remained relatively stable since 1990, despite the multitude of laws that have changed curriculum and school organization. The structure contains five levels: Infant Education, Primary Education, Compulsory Secondary Education, Upper Secondary Education and Higher Education. The first stage in the general educational system is Infant or Pre-primary Education and it is not compulsory. It has two levels: from age 0 to 3 and from age 3 to 6, the latter of which is free in all publicly funded schools. Primary Education is the first compulsory stage and lasts six years, between the ages of 6 and 12. Compulsory Secondary Education (*Educación Secundaria Obligatoria*, ESO) is the second compulsory stage and covers four school years, for pupils between the ages of 12 and 16. Together Primary Education and Compulsory Secondary Education constitute the “Basic Education”, ten years of free and compulsory education for all students.

After compulsory education, pupils can access Upper Secondary Education that is also offered in Secondary Schools. It lasts two academic years, usually studied between the ages of 16 and 18. It is offered at Vocational Training integrated institutions and in national reference institutions, and it also offers two pathways: Bachillerato (mainstream branch of general upper secondary) and Intermediate Vocational Training (professional branch or technical upper secondary).

Finally, Higher Education includes university and non-university tertiary education. University studies, include Bachelors, Masters and Doctoral Degrees as established by the integration of Spain in the *European Higher Education Area* (EHEA). Non-university tertiary education includes Advanced Vocational Training and Specialized tertiary education. Although Spain’s tertiary educational system consists of both university and non-university institutions, it operates—unlike other European systems—as a system primarily consisting of university institutions (OECD, 2009).

### 11.3 The Response to the Pandemic and the Impacts on Education

On March 9, 2020, to safeguard the health of the population from the spread of COVID-19, the Autonomous Community of Madrid was the first region in Spain to establish extraordinary measures to handle the coronavirus disease (COVID-19) pandemic (Comunidad Autónoma de Madrid, 2020). One of the primary actions was the decision to suspend classroom activity at all levels, from formal education to its complementary educational activities. The regional government recommended



resuming teaching online. Presuming a mitigated epidemic spread, schools were expected to reopen on March 26th.

On March 14th, the Spanish government with the Royal Decree 463/2020 declared a state of emergency to manage the health crisis created by COVID-19 (Boletín Oficial del Estado, 2020). Article 9 suspended face-to-face educational activity in all institutions and stages, cycles, degrees, courses, and academic levels included in article 3 of the Organic Law 2/2006 of Education (BOE, 2006), including university and all other teaching activities in public or private centers. During the suspension period, the educational activities were to be offered, if possible, remotely.

According to Zubillaga and Gortazar (2020) these measures affected nearly 10 million students in Spain and exacerbated problems in the Spanish educational system. The switch to online teaching was immediate and abrupt with no time for teachers to plan and design new learning procedures; it became an Emergency Remote Teaching experience, like the situation in other countries around the world (Hodges, Moore, Locke, Trust, & Bond, 2020).

This sudden transition of the teaching model highlighted several systemic gaps (Fernández Enguita, 2020):

- Access gap: as some students lacked an internet connection and electronic equipment at home. According to the National Institute of Statistics (INE) in 2019, 90% of the children between the ages of 10 and 15 in Spain have a computer at home and 93% of them have used internet during the last 3 months. 66% of these teenagers own a mobile phone. These figures suggest that Spanish youth had sufficient equipment to participate in online classes.
- Students' usage gap: stemming from lack of students' ICT (information and communication technology) literacy and capacity to use different hardware and software tools to learn. According to the European Monitor for Education and Training (November 2020),<sup>4</sup> 15% of European students do not have sufficient digital competencies.
- Teachers ICT gap: stemming from the combination of insufficient teachers' ICT training and lack of proficiency in the use of online platforms and interactive audiovisual material. 50% of the school principals mentioned that teachers in their schools had the capacity and resources needed to teach online (Zubillaga & Gortazar, 2020). However, families had difficulty sharing their time and ICT resources; parents had to simultaneously telework while the children attended online schooling (Santos-Montealegre, 2020, p. 87).

The Vice Councils of Education Policies and Organization of the Autonomous Community of Madrid published on March 10th instructions for the education centers to establish rules to continue with distance and online teaching (*VICE-CONSEJERÍAS DE POLÍTICA EDUCATIVA Y DE ORGANIZACIÓN EDUCATIVA* 2020, March 10). Seven instructions established that all personnel should continue attending the schools (except infant schools) and teleworking should be

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<sup>4</sup> <https://op.europa.eu/en/publication-detail/-/publication/15d70dc3-e00e-11e9-9c4e-01aa75ed71a1/language-en/format-PDF/source-171178208>.

promoted (as long as it was compatible with the continuation of the academic activities). The teachers should adapt their academic program to include home-based activities. The High Schools should pay special attention to students preparing the “*Evaluación del Bachillerato para el Acceso a la Universidad (EBAU)*,” the Spanish official university entrance exam. Teachers maintained contact with students and parents through the Learning Management System LMS platform EducaMadrid, the schools’ websites, the Enterprise Resource Planning (ERP) for education platform Roble, email, and other communication methods (including Google Classroom and WhatsApp).

Several teacher unions and labor organizations protested about these guidelines because they forced personnel to attend the schools without sufficient health protection measures. The following day, the Vice Councils published a modification “promoting teleworking,” but did not comment on whether academic activities should be guaranteed (*VICECONSEJERÍAS DE POLÍTICA EDUCATIVA Y DE ORGANIZACIÓN EDUCATIVA*, 2020 B).

During the following weeks, institutions across the country discussed different teaching scenarios, but the direct responsibility for real time decisions was left to the school management boards, even though they were not legally entitled to it.

The schools supported their communities to lessen the impact of the sudden shortage of resources: e.g., donated cleaning material, used 3-D printers to make face protection equipment,<sup>5</sup> and volunteered health care students at hospitals and elderly residences.

During this period, the Education Council of the State published two proposals: a brief list on March 20th and an extended version on April 7th (*Consejo Escolar del Estado*, 2020), which suggested two possible scenarios:

- Classrooms lessons might resume before the end of the school year. In this case, teaching should focus on essential contents and basic competencies. The lessons not easily learned at home would not be reflected on students’ final grades. Disadvantaged families should have a fair access to education in these conditions.
- Online teaching continues until the next school year.

This is the scenario which was adopted. In this case, the Council urged the administration to provide tools to evaluate the students remotely. It also proposed to only consider academic performance in the first two trimesters (before the pandemic) to determine whether students had successfully completed level 4th ESO (last compulsory secondary education level) and 2nd Bachillerato (University studies entry level).

The Education Council of the State<sup>6</sup> also recommended other provisions: EBAU university entrance exam: Establish common criteria among all Autonomous Communities about the structure and contents of the exam.

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<sup>5</sup> <https://www.educaciontrespuntocero.com/noticias/profesores-fabrican-mascaras-protectoras-3d/>.

<sup>6</sup> The Scholar Council of the State includes stakeholders in education. The council regularly analyzes the situation of education in Spain and offers its opinion.

Vocational Education and Training: The compulsory workplace learning should be reduced and substituted, if possible, by online alternatives.

Special Needs Education: The Councils recommended that the public administration provide measures to prevent infections, while increasing the material and human resources at these schools.

The Council urged the administration and the media to publicly recognize the efforts of the teachers, families, and students to maintain academic activities during the very complicated conditions created by the pandemic.

In Madrid, new instructions concerning the third trimester and the end of the school year were not published until April 21st (*VICECONSEJERÍA DE POLÍTICA EDUCATIVA*, 2020). In these instructions, the Autonomous Community of Madrid established that teaching should address all competencies and contents in the courses, including those planned to be taught during the third trimester, which contradicted with the recommendations of the Education Council of the State. Other autonomous communities did not focus on teaching new content and used the time to review previously taught skills and material.

Every April, evaluation exams of the last courses of primary and secondary education are carried out nationwide. In 2020, these exams were canceled (*MEFP*, 2020).

In May, the pandemic restrictions began to ease. Orders SND/399/2020 and SND/414/2020 of the Ministry of Health described the guidelines to limit risks. Two stages, Phase 0 and 1, established that in person classroom instruction could resume, but the orders did not mention specific rules for schools to follow. This situation created confusion in schools because there were no clear guidelines to follow.

On May 17th, Madrid published instructions to adapt education to the new situation (*VICECONSEJERÍAS DE POLÍTICA EDUCATIVA Y DE ORGANIZACIÓN EDUCATIVA*, 2020). These instructions transcribed the former orders of the Ministry of Health and made the principals of the schools responsible for the health protection of the academic community. However, once again, the instructions did not provide detailed rules to follow during classroom instruction, for example. The administration did not provide any extra resources to help schools adopt health protocols for in person instruction.

On May 22nd, new instructions for student and teacher examinations and evaluations were published (*DIRECCIÓN GENERAL DE EDUCACIÓN SECUNDARIA, FORMACIÓN PROFESIONAL Y RÉGIMEN ESPECIAL*, 2020). The deadline for these actions was June 16th.

At the end of May 2020, the health situation had improved, and the Autonomous Community of Madrid wanted to resume in person classroom education in June. The instructions from May 27th urged schools to organize support classes, mainly for students in 2nd Bachillerato that had to prepare the EBAU exam that would take place in July (originally planned for the beginning of June).

As mentioned, in Spain, the responsibility for educational matters has been transferred to the 17 Autonomous Communities. To try and set common policies and

guidelines, the communities worked together with the national Ministry of Education and Vocational Education and Training in an advisory board named Sectorial Conference on Education. After the session held by this board on June 11th, on June 22nd, the Ministry established and published the measures for prevention, hygiene, and health promotion against COVID-19 at education centers for the school year 2020–2021 (MEFP, 2020 B).

This document had two objectives:

- (1) Create healthy and secure school environments with prevention, hygiene, and health promotion measures.
- (2) Enable an early detection of cases and their adequate management with clear protocols and promote the coordination of stakeholders.

This document established four key guidelines:

- (1) Limitation of contact with others, separating 1.5 m or creating stable coexistence groups.
- (2) Hands and respiratory hygiene
- (3) Sufficient ventilation and frequent cleaning of the schools
- (4) Adequate and early management of patients

According to that document, each center had to have a Plan for the Beginning of the School Year and a Contingency Plan. It proposed the creation of COVID-19 teams within schools with members from different areas (management board, cleaners, families, students) to ensure the accomplishment and communication of the key goals.

A 26-page document listed detailed measures that described how to implement these four key guidelines to prevent the spread of COVID-19 in schools. As mentioned before in this chapter, the Ministry for Education and Vocational Education and Training offered national guidelines, but the responsibility to act in Spanish education was transferred to the Autonomous Communities.

During the next few weeks, the speed of the political actions taken to implement these measures in each of the regions had a direct effect on the milestones for the next school year starting in September 2020 (Trujillo, 2020).

It is very difficult to consolidate the decisions of the different Autonomous Communities during the summer of 2020:

- Several instructions, documents, and laws were published to modify previous versions.
- The media reported political decisions or ideas that were not sustained by official laws, had no assigned budget, and/or had no deployment plan.
- There were backstage actions that were not publicized or programmed: safety equipment or money, e.g., was suddenly sent to schools.

Each Autonomous Community published the definitive instructions that were to be considered by the schools to organize the school year at different times. There was also great variability in the dates when material and human resources would be made available to schools.

In the case of the Autonomous Community of Madrid, at the beginning of July 2020 the instructions (*VICECONSEJERÍAS DE POLÍTICA EDUCATIVA Y DE ORGANIZACIÓN EDUCATIVA*, 2020 B) established four possible scenarios:

- **Scenario I:** Extraordinary hygiene scenario. This was the initial planned scenario for the school year 2020–2021. Hygiene had to be guaranteed. If the distance of 1.5 m between the members of the academic community could not be maintained, masks had to be worn.
- **Scenario II:** If the health crisis worsened, face-to-face lessons would be cancelled. In Primary Education, the groups of students had to be in stable coexistence groups of a maximum of 20 pupils. In Secondary Education, students had to be offered between 30 and 50% of their lessons in person, while the rest could be offered remotely.
- **Scenario III:** Lockdown. All teaching would be offered remotely. The LMS Educamadrid would offer online exams.
- **Scenario IV:** Normality. The COVID-19 problem disappeared, and standard in person education would resume.

Considering that in July, Madrid planned for Scenario I for the 2020–2021 school year, the schools' organization instructions were very similar to those published during previous non-COVID-19 school years (*VICECONSEJERÍAS DE POLÍTICA EDUCATIVA Y DE ORGANIZACIÓN EDUCATIVA*, 2020 C).

Several organizations noted the need to increase resources to guarantee health and teaching conditions during the coming school year. For example, ADIMAD, the Association of High School Principals in Madrid, mentioned it was impossible to guarantee distances of 1.5 m under the standard conditions and requested more teachers to handle the academic deficits created by the pandemic (Torres Benayas, 2020).

In Madrid, during July 2020, all the planning and organization of the new school year was done mainly under pre-pandemic conditions and with no useful increase of material and human resources.

In a press release on August 25th, the President of the Autonomous Community of Madrid—Isabel Ayuso—informed that the new school year would start with Scenario II, and new material and human resources would be assigned (Ayuso, 2020). This announcement modified the initial instructions to increase protection measures, but this modified version still assumed Scenario I as the official starting situation (*VICECONSEJERÍAS DE POLÍTICA EDUCATIVA Y DE ORGANIZACIÓN EDUCATIVA*, 2020 D).

As result of the coordination with 17 Autonomous Communities, the Ministry of Education and Vocational Education and Training published the agreement to adopt public health coordinated actions during the 2020–2021 school year on August 27th (MEFP, 2020C).

Despite this agreement, the plans of the 17 Autonomous Communities had differences. Navarra, Castilla y León, and País Vasco continued offering 100% instruction in person while the remaining communities combined online teaching at different levels (Sánchez Caballero, 2020). ACADE, the Association of Private

Schools, demanded similar criteria nationwide, eliminating region-specific guidelines (ACADE, 2020).

To increase the distance between students, smaller student groups were created, increasing demand for teachers throughout the country. This increase in the demand for teachers created a deficit in several regions that competed to attract human resources.

In September 2020, the Spanish Government transferred COVID-19 funds to each Autonomous Community to finance actions in education (*Ministerio de Hacienda, 2020*) (Table 11.1).

PROA + (20–21) was a national fund implemented to finance orientation, progress, and enrichment of education from the COVID\_19 emergency (Secretaría de Estado de Educación, 2020) (Table 11.2).

The extraordinary amounts assigned to education during the pandemic represent around 0.2% of the GDP. As a result, there has been an increase of the total Spanish education budget from 4.2 to 4.4% of the GDP (Consejo Escolar del Estado, 2021).

FEDADi, the Spanish Federation of Public Schools Principals' Associations, prepared a report in October 2020 that described the beginning of the school year in Spain (FEDADi, 2021). Nearly all the Autonomous Communities modified their

**Table 11.1** COVID-19 funds to finance actions in education

Autonomous communities and cities of Ceuta and Melilla	Amounts (thousand euros)
Cataluña	337.438,19
Galicia	92.987,53
Andalucía	383.856,98
Principado de Asturias	32.529,93
Cantabria	22.141,31
La Rioja	13.204,99
Región de Murcia	73.820,12
Comunitat Valenciana	214.185,03
Aragón	53.448,02
Castilla-La Mancha	89.185,60
Canarias	87.368,30
Extremadura	43.295,39
Illes Balears	50.280,26
Madrid	291.696,57
Castilla y León	84.043,55
País Vasco	87.230,70
Navarra	29.287,53
Melilla	7.000,00
Ceuta	7.000,00
Total	2.000.000,00

**Table 11.2** Budget of PROA + (20–21)

Autonomous community	Amount (euros)
Andalucía	5.345.935,00
Aragón	1.750.588,00
Asturias (Principado de)	1.549.524,00
Balears (Illes)	2.002.454,00
Canarias	1.963.638,00
Cantabria	1.471.583,00
Castilla y León	2.152.493,00
Castilla-La Mancha	2.145.005,00
Cataluña	4.516.098,00
Comunitat Valenciana	3.439.736,00
Extremadura	1.677.069,00
Galicia	2.374.545,00
Madrid (Comunidad de)	3.768.353,00
Murcia (Región de)	2.230.945,00
Navarra (Comunidad Foral de)	2.032.957,00
La Rioja	1.579.077,00
Totales	40.000.000,00

provisions from July. 60% of them changed the school year start date. Teaching was heterogeneous, with different amounts of classroom and online teaching depending on the different communities and levels. In some regions, face-to-face teaching was authorized once lessons had already started, discriminating against schools that were not able to adapt. In nearly all cases, the administration had been in contact with the educators' associations, but in general it did not establish agreements with social stakeholders.

FEDADi notes that the number of teachers increased in most cases, reducing the student-to-teacher ratio. In some communities, it was very difficult to hire personnel for specific subjects. Protocols were constantly adapted to the pandemic situation, increasing stress for the entire education community in the school. The responsibility was mainly on the management teams, sometimes supported by specific personnel. Around 20% of schools considered using additional facilities outside their standard location. Nearly all administrations provided hygienic and health protection material, but only around half of them provided technological equipment. The decision of whether to use official online platforms or other tools was not unanimous. There were very few specific compulsory training activities, but there was a great range of elective courses. There was no increase in the number of school buses. Some of the communities decided to cancel services like the canteens and libraries. The extracurricular activities were mostly all cancelled. The inspection services offered heterogeneous approaches and FEDADi mentioned it would have been useful to reduce bureaucracy and increase collaboration.

Student academic achievement seems to have decreased. Ferrero mentioned that Adimad stated that students in 3rd ESO (between 14 and 15 years old) appeared to have failed 15% or 20% more subjects during the first trimester (September–December 2020) compared to the same period in 2019 (Ferrero, 2021).

Sanz, Cuervo, and Doncel (2020) concluded that “during the closure of the centers due to COVID-19, there was a notable increase in the use of digital resources compared to the last five years, although this increase was not homogeneous between applications or between regions. However, in Spain there was no divergence in access to digital educational resources due to the level of family income, at least regarding free access digital educational resources.”

The State Education Council published the first version of its report of the post-pandemic Spanish educational situation in January 2021 (Consejo Escolar del Estado, 2021). This report mentioned that in November, only 0.09% of schools closed because of COVID-19 cases after opening in September and 13.37% had classrooms under quarantine. Considering the data, the incidence of the pandemic at schools was lower than the general average. The age group with the highest incidence of contagion (ages 15 to 29 years old) caught COVID-19 at social and familial activities, but not at schools. This suggests that school precautionary measures were successful.

## 11.4 Conclusions

The education measures adopted during the COVID-19 pandemic should be analyzed in two different periods: until the end of the 2019–2020 academic year (March to July 2020) and during the first trimester of the 2020–2021 school year (September to December 2020). During the first period, most face-to-face instruction was suspended and replaced by online modalities. In some cases, small groups in Bachillerato returned to the classrooms in June to prepare for the university access EBAU exam. During the second period, students mostly returned to the classrooms with health risk control measures (masks, security distance, intense disinfection and ventilation, small “bubble” groups within classrooms, etc.)

In both cases, it is possible to draw several conclusions about the measures taken. We will try to examine the causes and present the consequences elicited in each set of measures.

- (1) In Spain, **measures were taken late**. There were no proactive policies; actions were slowly reactive to the pandemic development, with no previous plan of action. In January 2020, the Spanish government learned about the situation in China<sup>7</sup> and Italy (a neighboring country with many international exchanges

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<sup>7</sup> In January, a large number of reports warned of the seriousness of the situation, like those transmitted by the workplace hazard prevention service of the national police (Servicio de Prevención de Riesgos Laborales de la Policía Nacional), the Spanish National Research Council (CSIC) and the National Intelligence Centre (CNI). Also, January 30th the World Health Organization indicated that COVID was a “public health risk of international concern”. A confirmation that the existing data



with Spain).<sup>8</sup> In those places, infected patients, and deaths rapidly increased. The government did not take any precautionary measures with travelers coming from these two countries; for example, temperature checks were not instituted, negative virus tests were not requested (although Italy, for example, had already implemented them).

The borders were not closed, and it was not compulsory for the population to wear protective masks; it was only a recommendation, but there was no insufficient stock to meet the demand for face masks. International sport events (like the Valencia—Inter Milan soccer Champions League match on March 6th), political meetings (Vox party in Vista Alegre, Madrid on March 8th), public festivals like the *Mascletá* in Valencia and the feminist demonstrations to celebrate the 8th of March (attended by many government members) continued to take place. Only one major event, the Mobile World Congress of Barcelona, planned for the 24 to 27th of February, was cancelled on February 12th, but the decision was made by the organizers and not by the health authorities. It was not until the state of emergency on March 14th that implementation of those measures began.

- (2) Measures were taken with **no political consensus**. The political stakeholders did not assure a trustworthy and responsible national behavior. The government's strategy did not have the approval of the parties in the opposition nor support from some regional institutions; different Autonomous Communities took actions that did not coincide with the national government proposals. The strategy should have been national, but it was strongly criticized because there was no consensus, and it was undermined by the regional governments. Some critics were regional Presidents belonging to the majority party (as the case of Emiliano García-Page, regional President of Castilla-La Mancha, from the Socialist Party).<sup>9</sup>

There was no consensus between the central government and the governments of the Autonomous Communities. The different political parties did not agree on

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urged action before March (44 days after the WHO's alert) is that February 12th, John Hoffman, organizer of the Mobile World Congress, announced the cancelation of the event (expected to attract 100.000 visitors from all over the world to Barcelona). As a result of this announcement the Spanish Health Minister mentioned that "There is no public health reason that prevents celebrating an event of these characteristics in our country".

[https://www.elespanol.com/espana/20200331/informes-oficiales-gobierno-desdono-efecto-dem-olor-coronavirus/478703438\\_0.html](https://www.elespanol.com/espana/20200331/informes-oficiales-gobierno-desdono-efecto-dem-olor-coronavirus/478703438_0.html).

<https://www.larazon.es/espana/20200324/3tbo4izi6zdttpijmbpgbzogdi.html>.

<https://okdiario.com/investigacion/cni-traslado-preocupacion-delegacion-pekín-sobre-covid-19-pero-moncloa-ignora-5499913>.

<sup>8</sup> At the end of February Italy already had 900 cases, 21 deceases and specific measures were already in place in some areas of the country.

<sup>9</sup> <https://www.efe.com/efe/espana/politica/page-reclama-una-estrategia-nacional-mas-meticulosa-y-decidida-contra-el-virus/10002-4383874>.

basic common actions (for example, even votes in the National Parliament regarding declaration of a state of emergency were far from unanimous).<sup>10</sup>

Spanish Education and Health Care decentralization hindered agreement on safety measures, such as deciding and organizing the acquisition of protective equipment like masks for health professionals and the general public or the acquisition of ventilators for hospital emergency units.

High political polarization also hindered consensus. The Spanish parliament after the 2019 election represents 16 political parties (*Parlamento Español*, 2019). The parties Podemos (a radical left-wing party) and Vox (a radical right-wing party) defend extreme opposite ideas and foment the division of the chamber in two blocks. The government of PSOE and Podemos depends on the constant support of several parties of the Congress Chamber to achieve the necessary majority to approve each decision.

- (3) Instructions were **improvised**; it was difficult to determine outcomes. At the beginning, the actions taken were late and erratic; an example was the constantly changing information provided by the central and regional governments. The constant updates indicated that the policies were reactive and neither meditated, proactive, nor strategic.
- (4) There was considerable **misinformation that led to uncertainty**. At the beginning of the pandemic, there was no conceptualization of how the school year would end. There was also a great deal of uncertainty about the conditions to return to face-to-face teaching; many of the instructions and measures were not ready until a few days before the start of the 2020–2021 school year. The lessons from the first wave should have been learned from March to June, but uncertainty remained until the beginning of September, the month when classes traditionally resume. Consequently, the school year was delayed, and school actions were hastily adopted.
- (5) **Low ICT skills** of the teachers and students. The teachers did not have sufficient digital competence that could help them develop online classes during the lockdown. Some homes had insufficient ICT resources, but the impact on low-income households was less than expected. “In Spain there was no divergence in access to digital educational resources due to the level of family income, at least with regard to free access digital educational resources.” (Sanz, Cuervo, & Doncel, 2020)
- (6) **The individual effort of the management teams of the schools and teachers was considerable and very positive**. The personnel of the schools were able to offer an alternative education with distance teaching. Their ability to provide learning options has been critical to develop the key actions needed to provide online teaching first and to prepare the classrooms for safe face-to-face teaching after the lockdown. The schools have worked reasonably well thanks to its personnel and despite the political mismanagement.

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<sup>10</sup> Results in October 29th vote in the National Parliament to prorogation Alarm State was 194 in favour and 152 not in favour (against or abstention).

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**Javier M. Valle** Awarded the “Pedro Rosello” Award (Best Spanish Doctoral Thesis in Comparative Education). Professor at UAM University, specializing in Supranational Education (particularly in the European Union). Director of the UAM Research Group on Education Policy Supranational (GIPES). EURYDICE advisor. TEAM-EUROPE member. Vice President of SEEC. Director of the Journal of Supranational Policies of Education and Co-Director of the Spanish Journal of Comparative Education, REEC. Member of the Education Council of the Community of Madrid.

**Carlos de Olagüe-Smithson** Principal at the IES Pedro de Tolosa High School and part-time professor at the Carlos III University. Member of the UAM Research Group on Education Policy Supranational (GIPES), ADIMAD, Association of High School Principals, and responsible for international affairs in FP Empresa (VET Spanish association). Erasmus and VET expert.

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# Chapter 12

## The Impact of COVID-19 on a Fragile Education System: The Case of South Africa



Crain Soudien, Vijay Reddy, and Jaqueline Harvey

**Abstract** This chapter provides a critical look at what COVID-19 meant for the education sector in South Africa. It documents the path of the pandemic in the education space to understand its effects and the short-term responses of the education system. It begins with the premise that the South African educational system is structurally fragile. Its fragility arises out of the injustices of the apartheid system which disadvantaged schools and learners. It argues that the country has made progress in dealing with this legacy but that the drivers of change, such as improved household incomes, improved access to school materials and better nutrition, have come under strain in recent times. Because of COVID-19, the upward social mobility of low-income communities is growing in precarity while inequalities are exacerbated.

### 12.1 Introduction

As the world enters its second year of facing the COVID-19 pandemic, it is not only appropriate but necessary that the effects and implications of the pandemic on key social institutions, structures, and individuals are understood well. They need to be understood to assist with the immediate crisis—the urgent containment of the most egregious effects of the disease. More importantly, they need to be understood for the task of looking toward the future.

This future-oriented task will aid in the development of strategies that will position systems and institutions to anticipate and prepare for future similar events and leverage this crisis to make fresh starts where systems, processes, and practices have clearly not worked, not supported everyone equally, and not offered individuals and communities the opportunities to which they have a legitimate claim. This task has immediate relevance for systems of health and social welfare. It applies, however,

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C. Soudien (✉)

Nelson Mandela University and Human Sciences Research Council, 20, 4th Avenue, Rondebosch East, Cape Town 7789, South Africa

e-mail: [crain.soudien@uct.ac.za](mailto:crain.soudien@uct.ac.za)

V. Reddy · J. Harvey

Human Sciences Research Council, Durban, South Africa

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poignantly, to the question of education in the circumstances during the COVID-19 pandemic.

Understanding the existing social context is crucial in making sense of the impact of COVID-19 on South Africa, an enormously complex society. While it is a middle-income country, alongside of countries such as Brazil, Mexico, Turkey, and Malaysia, and therefore has access to resources and infrastructure affordances not at the disposal of poorer countries, its social, religious, linguistic, and cultural diversity is overlain with the deep fractures of race, gender and class. While South Africa has made progress in reducing extreme poverty, 'largely due to redistributive transfers in the form of government grants' (Zizzamia et al., 2019: 3), poverty rates remain high. Zizzamia and his colleagues' estimate is that while the country's middle class has grown, and has diversified in racial terms, it only stands at approximately 25% of the national population. In 2015, 55.5% of South Africa's people could not afford to meet their basic needs (Stats SA, 2017). An important distinguishing feature of the country is the social precarity of people who are around the food poverty line of R515 per month (Zizzamia et al., 2019: 9). Using the metaphor 'snakes and ladders,' Zizzamia and his colleagues emphasize how this precarity is determined by an individual's human capital and his/her access to the labour market. They do not specifically focus on access to education, but it could be argued that insufficient access to educational inputs is clearly a critical factor in giving substance to this precarity. As we show below, access remains unequally distributed across the population. How COVID-19 has conditioned this precarity we will only have a good sense of in the future.

We seek to develop a sense of how the effects of the pandemic have played out in South Africa. The approach we take is to examine the multiple levels at which these effects are in operation. These include the legacy level, essentially that of race, the socio-economic level and that of the individual's attributes. Adapting Amnesty International's (2020) categorisation, we work with the approach here that a learner's experience of education in South Africa is for the most part contingent on his/her racial background and socioeconomic status (which overlap significantly), and the less-well understood factor of his/her individual learning attributes. Inequality arises due to one or a combination of these factors.

The chapter begins with a description of the country's socio-economic context, especially as it relates to the provision of education. It then details the onset of the pandemic and the measures that were put in place at the national and provincial levels to mitigate the pedagogical effects of the disruption. These, as will be shown, were focused on keeping the system on track for meeting the formal requirements of the learning year. It was clear that the inherent fragility of the system gave it little room to experiment with new ways of dealing with its inherited and new challenges. The chapter then offers a broad discussion of the effects of the pandemic on two levels. The first, to which most attention is given in this chapter, is the systemic level where the effects of school closures are examined, namely loss of learning days and educational opportunities for different socio-economic groups. The second level is that of the individual. A crucial feature of this experience is that many learners were unable to learn from home; this was primarily reflective of their socio-economic conditions. They did not have the necessary infrastructure, devices, or



funds to participate. But the challenges were also personal. Children, irrespective of their social statuses, learn in different ways. These differences are not recognised in South Africa.

The approach we take in this chapter is largely in the spirit of a critical stock-taking exercise. It is intended to be both comprehensive and analytic. We have attempted to locate whatever has been officially released into the public domain by the educational authorities such as publicly gazetted bulletins and circulars, reports of deliberations, discussions, and consultations which the authorities have made available. Several public surveys relating to the pandemic and schooling have been undertaken in the country. However, most have focused on the public's attitude to the opening of schools and the readiness of schools to re-open safely. Although self-reported material exists in abundance on the effects of the pandemic on learners and their families, this material describes learners' experiences in general terms but does not constitute an empirically grounded resource for describing the effects of the pandemic on learning and learning attainment or the psycho-social well-being and health of learners. Our approach strategically interweaves the official data and the copious secondary data that has become available in our assessment.

## 12.2 The Beginning of the Pandemic

The first officially recognised COVID-19 case in South Africa was recorded on the 5th of March 2020. More than a year later, on the 28th of April 2021, the number of infections had reached 1,577,200 cases. The number of people who had died had reached 54,237 and 1,502,986 had recovered (see [Worldometers.info/coronavirus/country/south-africa/](https://www.worldometers.info/coronavirus/country/south-africa/) and Turner et al., 2021). As with other countries around the world, South Africa introduced strict measures, including multi-level lockdowns and prohibitions on travel and movement. The government established two key structures to manage the disaster, a National Command Council (NCC) consisting of key cabinet ministers under the chairpersonship of the national president and a Ministerial Advisory Committee (MAC) in the Ministry of Health. The function of the first was to make decisions with respect to the pandemic itself—the measures to be instituted to manage the pandemic and to co-ordinate the country's response to it. The NCC's challenge was not only that of saving lives, as was the case for many high-income countries, but, given the precarity of many households, also of saving livelihoods. That of the second, the MAC, was to advise on the multiple dimensions and issues relating to the pandemic.

Drawing on these structures, on the 15th of March 2020, the President of South Africa, Mr. Cyril Ramaphosa, declared COVID-19 a national disaster. A Level 5 lockdown was declared, first for 21 days and then extended for a further two weeks, and only permitted essential services and business to operate. A R500 billion relief package was announced for the provision of immediate support to unemployed workers and distressed businesses. The country, after the middle of April 2020 gradually eased levels of lockdown to Level 1 by September 2020. In the wake of a

resurgence in infection levels during the country's December national holidays—when daily infection levels (13,674 people) exceeded infection rates during the peak of the pandemic in July 2020—the President announced the return to an adjusted Level 3 Lockdown restrictions. Bans on large gatherings were instituted, movement across borders limited only to essential travel and the sale of and consumption of alcohol prohibited in public spaces. In January 2021, the country was placed under a Level 1 state of lockdown.

### 12.3 Outlining the Fragility of the South African Educational System

To understand the impact of COVID-19 on the education system, it is first necessary to make some remarks about its nature and structure. It is, in its current form, a young system struggling to divest itself of its apartheid origins. The apartheid order had created 15 separate racially and ethnically defined education authorities. A system that has left individuals classified as white as the most advantaged group. In the closing years of apartheid, the late 1980s, the education levels of the population were low. Almost a quarter of adults in the 25–64-year age-bracket had no schooling and only 8% had post grade 12 qualifications (Stats SA, 2011). As Fiske and Ladd (2004: 44) explain, “as late as 1994, after the National government had significantly increased spending on black learners, the amount spent per pupil in white schools was more than two and a half times that spent on behalf of black learners in the urban townships.”

Apartheid was abolished in 1994 with the ascent to power of an African National Congress-led Government of National Unity. To achieve a more equitable and economically productive society, education, schooling, and the economy were prioritised in line with Nelson Mandela's belief that “*education was the most powerful weapon which you can use to change the world*” (Hattang and Venter, 2011: 90). The new government immediately abolished segregation and inequality in education. It passed the South African Schools Act (SASA) which deracialized the system and brought all learners under a unified national authority (DoE, 1996). The national department had responsibility for policy, but implementation responsibility was granted to provinces on a subsidiarity basis.

In terms of the provisions of SASA (DoE, 1996) the current system consists of public and a relatively small number of private schools. In 2016, based on the latest officially available report from the Department of Basic Education (DBE, 2018), there were 29,749 established public and registered independent schools in South Africa. Of these schools were 14,795 primary schools accommodating 6,929,834 learners and 203,139 teachers, 6,186 secondary schools with 3,989,236 learners and 140,532 teachers, and 4,593 combined and intermediate schools with 2,013,465 learners and 74,942 teachers. Of the 13,307,830 learners in the system, 12,342,283 were in ordinary public schools and 590,282 were in private or independent schools.

Authoritative analyses of the school system describe it as a two-tiered system, characterised by the kinds and levels of inequality that are evident in the wider social system (see Reddy et al., 2012; Hunter, 2019). Seventy-five per cent of all learners in the system are in no-fee schools, many of which carry the legacy disadvantages of being largely black and poor, while the other 25% are in privileged schools, which were largely formerly white and now serve the expanded post-apartheid, and no longer white-only, middle class (Spaull, 2019: 4). The majority system is beset by all the challenges that come with racialized inequality: inefficiencies (van den Berg, 2008), teacher shortages in key subjects (Simkins, 2015) and poor school climate and discipline (Winnar et al., 2018). Although school infrastructure and resources have improved over the last 25 years, some learners still attend schools which have poor infrastructure and dilapidated buildings, dangerous and unsanitary pit latrines, issues with water supply, ill-equipped teachers, shortages of learning materials, large classes, and high dropout rates (see Amnesty International, 2020; Parker et al., 2020 and Stats SA, 2017). The privileged sector is the exact opposite; it is higher-performing and highly functional (Amnesty International, 2020). This structural division makes the management of the system difficult.

This two-tiered character of the system is evident in the country's performance in important benchmarking exercises such as the Trends in International Mathematics and Science Study (TIMSS). TIMSS has been conducted every four years at either the Grade 8 or 9 level since 1995. With the completion of the 2019 TIMSS cycle, a 25-year longitudinal view is now available. TIMSS 1995 ranked South Africa the lowest of the set of participating countries with a very low mathematics achievement score of 276 (SE 6.7). Only one in ten learners demonstrated that they had acquired the minimum mathematics proficiency for their grade-cohort. Improving educational outcomes in this first eight-year period was difficult. Mathematics' achievement scores remained stagnant over the TIMSS 1999 and 2003 cycles. From TIMSS 2003 to TIMSS 2011, the country recorded an increased average mathematics score, and further increases were noted in TIMSS 2015 and 2019. Between 2003 and 2019, the mathematics achievement improved by 102 TIMSS points or one standard deviation (Reddy et al., 2020). The gains were largely due to post-apartheid's most significant drivers of social change, improved home and school conditions effected through a combination of social welfare interventions and socio-economic factors, the provision of social grants, school nutrition schemes and fee-subsidies, improved school resources and instructional materials, increased proficiency in the language of the assessment, improved teacher knowledge, increased levels of parental education, and a greater focus on what happened inside schools and classrooms (Zizzamia et al., 2019).

The TIMSS 2019 mathematics average achievement score of 389 (SE 2.3) and the fact that four in ten learners demonstrated that they had acquired the minimum mathematical proficiencies shifted the categorisation of the country's educational outcomes from *very low* to *low*. An even bigger success story after 2003 was that the highest achievement increases came from the lowest performers who were probably the most disadvantaged learners and who had benefitted most from government's interventions.

Despite these developments, two legacy effects are of relevance for this analysis of the effects of COVID-19 on learner outcomes. First, South African achievement continues to be linked to race, socio-economic background, and geographic location. The mathematics achievement gap between fee and no-fee schools in TIMSS 2019 of 75 points indicates that learners from disadvantaged backgrounds still perform at a lower level compared to their advantaged counterparts (Reddy et al., 2020). Moreover, returning us to Zizzamia et al.'s (2019) characterisation of social mobility as a 'snakes and ladders' phenomenon, we must be concerned about how disadvantaged students are able to sustain the gains they are making given the drivers of change on which they depend are vulnerable. The mathematics improvement rate from TIMSS 2003 to 2011 was 7.4 points per year, but from 2011 to 2019 decreased to 4.6 points. We are unable at this point to definitively explain the dynamics behind these shifts but, following Juan and Visser (2017), suggest that they could be related to significant home and school environment improvements. Among other factors, the cycles of greatest improvement in TIMSS performance happened during a period when 'positive changes over time' were taking place in learners' home environments (Visser and Juan, 2020: 19–20). Upward as the improvement trajectory continued, the impetus faltered after 2011. This was the period, significantly, when socio-economic conditions in the country deteriorated rapidly as unemployment increased. In an analysis of the impact of COVID-19 on education, the significance of the relationship between the increased social and educational provision and improved learner educational attainment cannot be overstated. Our drivers of improvement were compromised.

## 12.4 Government's Response to COVID-19

When it became clear that South Africa, like the rest of the world (Zhu and Liu, 2020), was staring the prospect of uncontrollable contagion in the eye, its government closed down the schooling system. The Department of Basic Education (DBE) (2020a), responsible for the administration of all public schools, announced at the beginning of the national lockdown that:

In accordance with the pronouncement by the President on 15 March 2020, schools will be closed from 18 March and will reopen on 14 April 2020. This decision has been informed by the warnings provided by the National Institute of Communicable Diseases and World Health Organization who have highlighted the alarming increase of infections within the country over a three day period... Provincial Education Departments, districts and schools are advised to take advantage of this time and are encouraged to utilise the time effectively by ensuring that learners participate in established stimulating programmes such as the Read to Lead programme, maths buddies, constructive holiday assignments, etc. through the supervision and guidance of parents and the broader community whilst learners are at home. This will be supported through the provisioning of workbooks, worksheets, readers, etc.

Closing the schooling system required that the DBE plan and inform the public about the steps it would take to keep the system functional. Within a month, in the middle of April 2020, the DBE had put in place a COVID-19 response programme with the support of the National Education Collaboration Trust (NECT), a multi-party civil society stakeholder. A major initiative was put in place to have water tanks and water supplies provided at every school and community (2020a).

The March 2020 Level 5 lockdown, as indicated above, meant school closures at the beginning of the school year and the expectation that work, teaching, and learning would continue from home. The most important elements of this emergency plan were the following:

1. A multi-media learner support programme in conjunction with the national radio and television broadcaster, the South African Broadcasting Corporation, under the banner: COVID-19 Learner Support. It broadcast lessons through three public television and 12 national and eight regional radio stations.
2. Curriculum support lessons were placed online for Early Childhood Development (ECD) and Grades 10, 11 and 12 learners with emphasis on Mathematics, Physical Sciences, English First Additional language, Life Sciences and Accounting; the provision of access to textbooks and teacher guides; and arrangements with telecommunication platforms to waive subscription fees and data costs to make education material accessible to learners.
3. The DBE upgraded its website. Study material for all grades was uploaded to this website ([www.education.gov.za](http://www.education.gov.za)). Included in this material were study guides and revision booklets for the senior phase (Grades 10–12), workbooks for the intermediate phase, and additional material for special needs groups and for those repeating their studies. Tips were provided to parents for helping their children learn. Psychosocial resources were also made available including guidelines for special needs schools.
4. Multimedia materials supported by mobile applications were made available on the DBE website.
5. Email and WhatsApp feeds were sent to teachers who were responsible for teaching reading and for the management of their schools with advice about how to manage their children's learning challenges.
6. A series of consultations was held between the DBE and teacher unions on issues that were arising during the lockdown.
7. The DBE convened two national consultations bringing together approximately 100 educational experts to discuss plans and take advice on the lockdowns.
8. A monitoring and evaluation programme process was put in place to assess system readiness for the provision of personal protective equipment, the availability of water at every school, and the levels of capacity in individual schools to ensure learner safety.
9. Advice for how to resume school feeding in contexts where this was needed.

In addition to the efforts of the DBE, the NECT was also able to report (NECT, 2020b) that the National Association of Social Change Entities in Education (NASCEE), a network coalition of non-governmental organisations, funders and individuals had committed themselves to a national collaboration compact, developed a web-based platform which indicated the activities and services of NGOs and funders in response to pandemic and begun coordinating the curation of online and offline learning content for learners. While this list is not exhaustive, a multifaceted approach was taken in response to COVID-19-related challenges, although it was highly reliant on technological and Internet access.

In June of 2020, the DBE (2020b) published its second medium-term plan entitled *School Recovery Plan in Response to COVID-19 (SRPRC)*. The proposal had initially been to open schools in June 2020, but because of a spike in infections the date was pushed forward, and schools ultimately reopened in August 2020. The plan was based on a phasing-in of grades and a rotational approach. Beginning with learners in examination classes, Grades 7 and 12 were brought back first and then the other grades on a gradual basis. The rotational arrangement also made allowance for only having particular grades in attendance on particular days of the week to minimise the dangers of over-crowding. Schools were given options for rotation. The document paid a great deal of attention to the questions of safety and infection mitigation. With respect to learning, some key purposes of the SRPRC were to:

### 1. **Develop a Robust Curriculum Recovery Plan**

This included a plan for the recovery of teaching and learning time. Attention was given to the length of the school day, the length of the school term, and a reduction of time allocated for examinations and assessment. Guidance was also provided to learners for self-directed learning. The SRPRC (DBE, 2020b: 12), with respect to self-directed learning, said that “(i)n the case of self-directed learning, the learning material is prepared in such a manner that learners are able to progress from the known to the unknown on their own ... such content must be well scaffolded and mediated through templates and vivid examples.” The curriculum for Grade 12 was not revised.

### 2. **Manage Examinations and Related Activities**

South Africa has a high stakes, externally set matriculation examination. These papers are normally set a year in advance. The DBE took the decision that the standard June Examination written by all learners across the system would be set aside. The exit level examination at the end of the academic year, which under normal circumstances would take place from late October and in November, would be written in November and early December. In terms of content, it would remain the same and all learners, irrespective of their opportunity-to-learn circumstances, would write the same exit level examination.

### 3. **Develop Standard Operating Procedures to Guide the Basic Education**

### **Sector to Manage and Contain the Spread of Infection**

These procedures, aimed specifically at the health and safety of schools during the pandemic, were authored with the assistance of the Education Technical Working Group of the MAC and the NICD.

The re-opening of schools was implemented using a ‘differentiated approach’ (DBE, 2020b: 5). Underpinning the curriculum segment of the SRPRC were concerns about “how much of the curriculum content could not be covered because of ... the lockdown; implications of the lost time for teaching and learning ... assessment ...; how can the time lost be recovered or can the curriculum be reviewed to ensure that the essence of the curriculum is completed in the remaining time available?” (DBE, 2020b: 6). The plan explained that its execution would assist schools to recover “between 29 and 33 teaching days .... The number of days recovered will be less than the number of days lost and hence there will be a need for a trimming and reorganisation in all grades/years, except Grade 12” (DBE, 2020b: 14). The time lost for Grade 12 learners in particular would be recovered through a shortening of the period scheduled for examination preparation and the extension of the school day.

Operational principles for guiding the SRPRC were explicitly articulated around the need for Inclusion and Equity, ‘ensuring that all learners, and particularly the most vulnerable, access the planned programme’, taking cognizance of the unique needs of schools, phases and grades/years, ensuring that plans were determined in a flexible way ‘guided by the scope and size of the school population’, time management to optimise the use of teaching time, and preserving learning quality and a ‘focus on skills, knowledge and values, rather just content coverage’ (ibid). It is important to emphasize that health and safety were the overriding feature in all these plans.

Interestingly, the provincial education authorities, given the subsidiarity principle around which education is governed in South Africa between the central government and the provinces, largely elected to use the guidelines and resources made available at the national level. Exceptions to this were the Free State Education Department and the Western Cape Education Department (WCED). The former, in addition to repeating the national schedules for radio and television-broadcast lessons and guides, also made available podcasts of lessons for issues and topics and gave their learners access to online and recorded tutorials (see [www.education.fs.gov.za](http://www.education.fs.gov.za)). For their part, the WCED (see [wcedonline.westerncape.gov.za](http://wcedonline.westerncape.gov.za)) not only provided guidelines for schools for managing the pandemic but made substantial education resources available for both learners and teachers and, most significantly, made available weekly lesson plans developed by their internal subject teams for the entire curriculum. For every subject in every grade there was a lesson plan and an actual lesson which could be referred to.

The response of South Africa to the pandemic was thus like that of other countries where an emphasis was placed on the provision of online and hardcopy resources to facilitate educational processes. We turn now to the impact of the pandemic on the learning experience. How much learning took place and what is one able to say, with a reasonable degree of confidence, was the effect of the disruption?



## 12.5 Education in 2020 and 2021: The Impact of COVID-19

Given the unprecedented nature of the pandemic and the limited empirical data we have at our disposal, the approach we take below is to work largely speculatively with respect to assessing the impact of COVID-19 on learning. As we write this chapter, the results of the National Senior Certificate Examinations, the terminal examination for the schooling system, were announced. Interestingly, while the national pass rate declined by 5.1 percentage points, from 81.3% in 2019 to 76.2% in 2020, the Minister of Education, Mrs. Angie Motshekga (2021), explained that the decline was attributable to a drop in the performance of *progressed learners*, a group of candidates who were repeating their examinations. It is not possible, however, to conclude from this that COVID-19 has had *no* effect on learning.

In South Africa, as elsewhere in the world, the educational impact of the pandemic included the following: (i) learning losses because of school closures, (ii) widening of pre-existing education disparities and (iii) learning gains made over time would be wiped out (Dorne et al., 2020; Hanushek and Woessmann, 2020; United Nations, 2020).

During the March 2020 Level 5 lockdown there were two possible ways to continue with learning activities: online learning or self-learning with parental and sibling support. Even for advantaged schools and learners who could do so, several issues influenced the effectiveness of online learning. For example, the urgency of responding to the pandemic did not allow for the development of an implementation plan or a system of educator and learner support. Educators and learners were thrust, almost overnight, into an education model with which few had experience (Doukakis and Alexopoulos, 2020).

More advantaged schools and households were better able to sustain learning using online learning strategies, although this required effort and presented challenges for both teachers and parents. For this group of learners, schooling continued through online lessons, either through live online teaching or uploaded recorded lessons.

Many disadvantaged schools, however, did not have the means to facilitate satisfactory online learning (Parker et al., 2020; Spaul, 2020). In poorer households, many children did not have a quiet workspace, desk, computer, internet connectivity, or parents who had the time or capacity to take on the role of home schoolers. The 2018 General Household Survey estimated that 22% of households had access to a computer and only 10% had internet access (Stats SA, 2019: 63). Spaul and Van der Berg (2020: 8), based on a survey they conducted, found that while 90% of South African households reported having access to a mobile phone, only 60% reported having access to the internet via their mobile phone.



A survey of their members by the South African Democratic Teacher Union (SADTU, 2021) revealed that two-thirds of learners from poorer households had almost no communication from their teachers during school closures. During the time learners remained at home, Spaul and Van der Berg (2020: 9) estimated that 18% of all children in the school-going age group, were in households without an adult caregiver during the day. What is more, without either teacher contact or adult supervision many African language mother-tongue learners would have had no assistance for managing the English in which most of the lessons would have been delivered.

This differentiation in social capital and resources meant a differentiated set of learning experiences at home. While all learners experienced learning losses during this time, because of the lack of access to educational inputs for three-quarters of learners, almost no learning took place for many children from poor backgrounds. Several media reports confirmed this. The executive director of a large teacher union described the situation of Grade 1 learners in several schools in the country: "... (there is going to) ... be a generation of people who cannot read at all. If you think we have a problem with reading now, watch this space" (Macupe, 2021: 5). Macupe (ibid.) cited a parent who said that her child was going to high school, but he struggled to read and write. As we noted previously, the government supported learning programmes through public radio and television, but these covered limited number of subjects and grades and were not enough to bridge the divide of unequal access to resources. On the basis that television programmes were available for only one and half hours per day, Spaul and Van der Berg (2020) calculated that learners were only receiving the equivalent of 5% of the instruction time they would have received in a normal school day.

School closures also meant the halting of supplementary services provided through the schooling system. For instance, currently, over nine million learners receive two meals per day through the National School Nutrition Programme (NSNP). The suspension of this programme during the lockdown period left these children at risk of being underfed for several months (Le Grange, 2020; Parker et al., 2020).

For many learners, school is a source of education as well as safety and support. One school located in a rural area moved final-year learners in with their teachers to continue their studies and support during lockdown (CBS News 2020). As one learner stated, many were aware of the importance of education for social mobility and the reduction of inequality: "*There are four people in each room, and we get lunch there after school. It's important because getting a good education – especially in South Africa – it sort of determines where you're going to end up in life*" (ibid).

## 12.6 Time Away from Schools and Classrooms: Deepening and Widening Inequalities

Schools closed on 14 March 2020 and returned in a staggered manner from 8 June 2020. Grade 12 and 7 learners, after *not attending* school for 28 and 33 days respectively, were the first to return. Grades 5 and 8 were the last to return. They had been away from school for 81 days (Gustafsson, 2020a; Mohohlwane et al., 2020). When full classes of the first grades returned (Grades 12, 7, R, 6 and 11) the school managed the *daily distancing* by distributing learners into different classrooms. As the remaining grades returned, to adhere to the social distancing protocols, learners attended on a *rotational basis*, perhaps on alternate days. Using official data, the work of Gustafsson (2020a) shows it is possible to describe the number of school days that were lost because of the closures (Fig. 12.1).

Gustafsson estimated that most learners could have lost almost 60% of the originally anticipated 198 contact school days. When differentiated by socio-economic status, learners from the low SES group’s loss rose to 65% of contact time. Grade 12 learners, writing an external standardised examination, which was not adjusted at all, are estimated to have lost around 35% of contact time. This loss of contact learning time necessitated a trimming (reduction) and re-organisation of the curriculum for learners returning to school in 2020. In January 2021, 58% of school principals

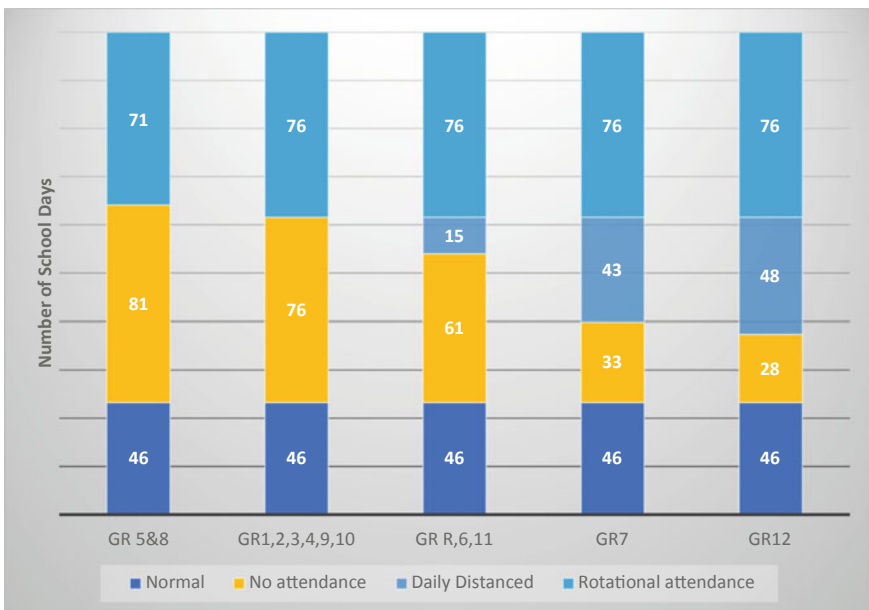


Fig. 12.1 Extent and pattern of school attendance by grade level. Source Gustafsson (2020a: 1)

reported that they had completed most of the trimmed curriculum for most subjects (SADTU, 2021).

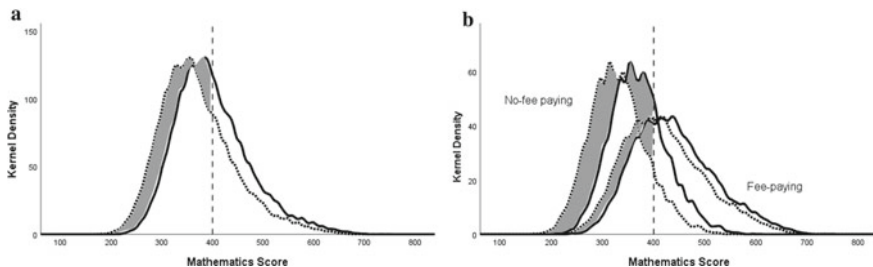
While we can estimate and quantify the loss of contact learning time at schools, it is more difficult to quantify actual learning loss. Helpful here is the modelling developed by researchers such as Maldonado and De Witte (2020). They build on studies which look at the effects on test scores following long summer breaks (Cooper et al., 1996), absence from school (Aucejo and Romano, 2016) and the experience of gaps in instructional time (Lavy, 2015). These studies show that a break from school routines will lead to learning losses because of memory decay and limited learning opportunities during school breaks. The implications of their findings are that:

- (i) There *will* be learning losses because of pandemic-related school closures.
- (ii) Learning losses will be higher for mathematics than for reading.
- (iii) Learning losses will not be uniform, with disadvantaged learners experiencing higher learning losses (Kuhfeld et al., 2020; Hanushek and Woessmann, 2020).

To estimate the learning losses in South Africa because of the pandemic we chose to examine the disruptions in 2020 and speculate what possible learning scenarios could look like. We adapted the World Bank<sup>1</sup> methodology which looked at scenarios for how the learning curve would be affected by school closures to South African data. We asked the following question: if the TIMSS 2019 achievement instrument was administered to grade 9 learners in October 2020 (we will call this predicted estimate TIMSS 2020) what would their mathematics achievement score be?

In TIMSS 2019, the national average mathematics score was 389, with a standard deviation SD of 77 points, with fee-paying schools scoring 440 (SD of 79) and no-fee schools 365 (SD of 61). Across South Africa, four in ten learners demonstrated they had acquired the basic mathematical proficiencies, with two in three learners in fee-paying schools and one in four in no-fee schools demonstrating this proficiency.

We plotted the South African mathematics learning curves (Fig. 12.2a). In the first graph (a), the solid line plots the learning curve of South African TIMSS 2019



**Fig. 12.2** Learning losses curves for ‘TIMSS 2020’ based on TIMSS 2019 based on TIMSS 2019<sup>2</sup>

<sup>1</sup> Retrieved from <https://blogs.worldbank.org/education/we-should-avoid-flattening-curve-education-possible-scenarios-learning-loss-during-school>.

<sup>2</sup> For illustration, the learning loss graph is not drawn to scale.

mathematics achievement. The second graph (b) plots the learning curve in no-fee and fee-paying schools. Learners in fee-paying schools (graphs on the right) achieve higher scores than their counterparts in no-fee schools (graphs on the left). The vertical dotted line, at the mathematics score of 400, represents the point of minimum proficiency in mathematics. Learners scoring below 400 points have not demonstrated the minimum mathematical abilities for that grade.

Our challenge was then to predict the mathematics scores for ‘TIMSS 2020’. Given the unprecedented nature of the pandemic, the methodological uncertainties to estimate learning losses, the limited empirical data we have at our disposal and the little we know about how the curriculum recovery process took place. The methodological approach we took was to review other studies that predicted learning losses and speculated what the impact of COVID-19 on learning only in 2020 would be.

Many predictions rely on ‘suggestive extrapolations’ from past studies. These learning losses are predicted in terms of loss of a share of a year of schooling (Azevedo et al., 2020), reduction in learning gains expressed as percentage loss (Kuhfeld et al., 2020), loss of future earnings (Psacharopoulos et al., 2020) or loss of years of learning (Kaffenberger, 2020).

As an illustrative example, Maldonado and De Witte (2020) calculated the effects of school closures on standardized scores for Grade 6 learners in Belgium using six years (2015–2020) of standardized test data and administrative data which measured learners’ socio-economic status. Belgian schools were closed for nine weeks (or one third) of the school year. In the first three weeks of the school closures teachers could only repeat and practice previously taught material. In the next four weeks teachers previewed new materials to be taught when schools would reopen. Most time was spent on the fundamental subjects: language, mathematics, and reading. It is estimated that distance learning took place for up to four hours a day, but one third of learners may have not had access to online learning.

Within this context, the authors found that “students in the 2020 cohort have school averages in mathematics between one fifth and one fourth of a standard deviation lower than students participating in the standardized tests in the five previous years” (page 12). A further finding was that inequality both within and across schools increased because of school closures.

Although South Africa is far from Belgium geographically and in terms of demographic and socio-economic characteristics, we will apply the results from the Belgium panel study to estimate the learning losses in South Africa. Recognising the contextual differences, we speculate that the learning losses in South Africa will be higher than in Belgium. Therefore, the application of the results from the Belgian study presents the minimum learning loss scenario for 2020 in South Africa.

Using the range of learning losses (0.19–0.25), for South Africa we project a scenario where the loss of learning is by 0.25 SD in no-fee schools and 0.19 SD in fee paying schools. The decrease on the national score will be by 0.21 SD. Applying these values to the South African TIMSS 2019 data, Table 12.1 provides the South African estimates for ‘TIMSS 2020’.

As the projection shows, if the grade 9 classes took the TIMSS 2019 achievement test in 2020, in a best-case scenario the TIMSS 2020 mathematics scores will drop

**Table 12.1** Speculated mathematics scores in ‘TIMSS 2020’

	TIMSS 2019 math score (SD)	Learning loss: SD and score	TIMSS 2020 math score	TIMSS 2015 math scores
National	389 (SD 77)	0.21 SD (16 TIMSS points)	373	372
Fee-paying	440 (SD 79)	0.19 SD (15 TIMSS points)	425	430
No-fee paying	361 (SD 61)	0.25 SD (15 TIMSS points)	346	342

from 389 to 373 points. The mathematics achievement will decrease to 425 points in fee-paying schools and 346 points in no-fee schools. The dotted line in Fig. 12.2a plots the lower national learning curves and in Fig. 12.2b the lower learning curves for fee and no-fee schools. Applying the Maldonado and De Witte methodology to the South African data shows that the ‘TIMSS 2020’ scores have regressed to the TIMSS 2015 levels where the national score was 372, with fee-paying schools at 430 and no-fee schools at 342 (Reddy et al., 2016).

In TIMSS 2019, 41% of learners demonstrated that they acquired the basic mathematical skills. In 2020, this is speculated to regress back to the 2015 levels of 34%. The shaded part on the graph represents the share of additional learners who cannot demonstrate basic mathematics proficiency because of COVID-19 related school closures.

The sad and uncomfortable truth is that South Africa, which started 2020 with low and unequal achievement scores, is likely to end the year with even lower achievement scores. The achievement gains made since from 1994 would probably revert to the achievement levels recorded in TIMSS 2015—a loss of five years of learning. Additionally, the effect of the pandemic on the education system will widen existing inequalities.

In this uncharted terrain of the pandemic, encompassing learning losses and recovery, we do not yet know the number of days that will be lost to school closures in 2021, the quality of engagements learners will experience when they are in school, and how individual learning recovery will occur. If there is no quick recovery of the learning losses, our projection is that fewer learners will graduate from the school with requisite skills and knowledge to access post-school education, training opportunities, and find an appropriate place in the labour market. Based on what we have presented here, we argue that COVID-19 will have long-lasting effects on our education, economic, and social systems.

## 12.7 Development of the Individual Learner

In the final part of this chapter, we briefly draw attention to the situation of the individual learner. We argue that we know little about the learning dynamics of individual learners and their experiences of learning in individual subjects. COVID-19 would have brought this phenomenon—how children learn—into the consciousness of many people, especially parents, in a new and hopefully informative way. As one of the most challenging issues raised by the pandemic, we suggest more attention is given to the inequalities that the individual learner experiences.

To understand the circumstances of the individual learner both his/her/their social and biological factors need to be taken into consideration. They interact with one another to contribute to individual development, a complex and multi-layered process (Jotterand, 2018; Stetsenko, 2017). We briefly present the factors of nature and nurture. As an example, and crucial to learning, individual brain development is at the intersection of biological development and environmental factors. This is commonly referred to as brain plasticity which explains how environmental factors substantially shape neural pathways within the brain. Exposure to protective or risk factors within our environment contribute to or hinder brain development (Jotterand, 2018; Shavit et al., 2018; Stetsenko, 2017). This knowledge regarding individual development represents a shift from biological determinism to an understanding that the individual adapts to various forms of experiential adjustments (Stetsenko, 2017). Thus, both the biology of the individual as well as factors within his/her/their environment are crucial influences.

As we move away from biological reductionism, we must understand how actively human bodies react to, organise, and coordinate their own engagements with the wider physical, environmental, and social world (Stetsenko, 2017). Drawing from the work of John Dewey, Jean Piaget, Lev Vygotsky, and others, in the twentieth century, “human beings are understood to be carrying out, right from birth, the ongoing process of relational activities inextricably connecting them with their environment and other people” (Stetsenko, 2017: 127). Development is thus an evolving, lifelong activity from which arises individual attributes. The individual critically contributes to and generates his/her/their own development (Stetsenko, 2017). This development, moreover, does not take place in isolation. It is embedded within collective social practices and dependent on sociocultural supports, tools, and mediations (Stetsenko, 2017). The social conditions which either afford or impede individual development are of critical importance, as is the interaction between the individual and that environment (Stetsenko, 2017). Development is thus “the outgrowth of dynamic relations among the biological and the social, between the individual and others—other people, across multiple settings, across people, and artifacts that may be physical and/or ideational” (Lee, 2017, p. 95). The pandemic has made this question of development and its complexities very clear.

The course development of the learner takes is thus vitally reliant upon sociocultural supports, tools, and mediations. The personal nature of development, furthermore, indicates that the affordances of supports, tools and the mediation provided by teachers and parents must not only be accessible and available to all individuals and communities, but must also be tailored to meet their individual needs (Stetsenko, 2017). As individual learners actively engage with their world and co-construct their unique experiences, they require personalised supports that assist them in their development and academic performance. This is particularly necessary in South Africa where we have an extremely diverse learner population that differs across race, class, ethnic background, language, religion, and many other identities (Soudien, 2020a). Using inequality as an example, we must address the ways in which stereotypes regarding the experience of poverty are enacted in the lives of learners and in the practices and organisation of schooling. It is not enough to use the social description of 'white' or 'black' to understand the learning experience of the child. Each child is different. Tools must be developed to assist administrators and educators in understanding how even curricula and teaching practices perpetuate stereotypical perceptions of ability and of resources for coping. Such framings move us away from deterministic explanations that are deficit-based instead of examining the ways in which the sociocultural environment can support the functional human development needs of all learners (see Lee, 2017). To illustrate the complexity of the learning challenge for individual learners in South Africa, and the influence of COVID-19, we refer to a case study carried out by Shafieka Isaacs (2020) during the lockdown period.

Isaacs (2020) provides a narrative portrait of how Kabelo, a nine-year old boychild in the second grade living in the Soweto township, navigated his learning experience both before and during COVID-19. Through description of several contradictions between Kabelo's performance and behavior in academic and play spaces before COVID-19, the author illustrates the intersection of persistent structural inequality and the life of this individual learner. For example, within formal education Kabelo is required to engage in monolingual teaching and learning as prescribed in the curriculum. Based on his low literacy test scores, he was labelled as an academic underperformer. However, outside of this domain Isaacs shows that he is, in real terms, multilingual and capably navigates his world. He exercises agency and makes responsible decisions. This contradiction, and others, suggest that the two systems—home and school—are in conflict, with only the academic performance system enjoying legitimacy while the knowledges and capabilities shown in the play system are not recognised. Further contradictions and misrecognitions were identified under lockdown when schools were shut down and Kabelo was restricted to his home. For example, while he had the self-motivation to watch educational TV channels, engage in learning through play, and complete the limited homework his mother collected for him from the school, his actual experience, including the agency he demonstrated, was not observed, and acknowledged by his school. Deemed to be underperforming, there is contradiction between how Kabelo attempted to continue his learning and the lack of communication and guidance he received (Isaacs, 2020).

Kabelo's case, we argue, is illustrative of what we need to understand much more fully. It is argued here that how learners are individually positioned, located, and enabled to manage their learning is of the utmost importance. A socially-just education system is one which not only recognises the differing social circumstances of learners but is also attentive to their learning dynamics and responds with inclusive policy, pedagogy, and curricula. Kabelo is the subject of social and systemic inequality—he is black and is a learner in a disadvantaged part of the schooling system—but he is also disadvantaged by the lack of recognition of his individual capacities and capabilities. This latter point is of particular significance.

The literature on learning and cognition is now clear, diminished opportunities for stimulation—through poverty of opportunity, the presence of trauma (and we would argue that switching from mother-tongue to learning in English is an example of trauma), and the lack of nutritional food—precipitate hormonal responses in learners which negatively impacts neurocognitive development, potential educational achievements, and ultimately upward societal mobility (see, *inter alia*, Farah, 2010; World Bank, 2018). The example of Kabelo raises the necessity for further interdisciplinary research to develop evidence-based education that can provide individualised answers for learners without losing human relationships and interaction which are equally necessary for learning (Nóvoa and Alvim, 2020).

## 12.8 Conclusion

Although we cannot state categorically to what extent learning losses have taken place and their scale, we can speculate broadly that this has happened. It is also likely learning loss has been experienced disproportionately by those who are vulnerable and less able to draw on the resources of the system. Privileged children are more able, except those with challenging learning differences, to substitute for the shortcomings of an education system and will arguably return to their academic trajectory with relative ease. COVID-19 has thus laid bare both the inequalities in provisions needed to continue learning from home—such as funds, digital devices and data, adequate nutrition—as well as the disparity in how well teachers, learners, and parents have been equipped to do so. Even though many countries struggle with this divide, the distinctiveness of the South African experience is the fragility of its educational system and its capacity to deal with shocks such as COVID-19. While we have seen a slow improvement, it is clear that the system may not be able to sustain the gains it has made. Instead, as Gustafsson (2020b: 3) has shown, fragility is evident in the very drivers of the country's improvements—improved access to materials, improved household incomes, improved access to nutrition. All these drivers of development have been challenged by COVID-19. In its response to the pandemic, the government has struggled simply to keep the system operational. It has not, as better resourced and better established school systems have, been able to improvise, innovate and experiment in response to COVID-19. As we suggest in our speculation using the TIMSS data, the country is in danger of being set-back in its improvement



trajectory by five years. As even this first attempt at making sense of the COVID-19 educational experience reveals, the South African educational system and the most prevalent educational approaches being implemented are not sufficiently robust and innovative to deal with the first order of business of stabilising the system, let alone the challenges of innovating towards greater equality.

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**Professor Crain Soudien** was educated in the fields of education and African Studies at the Universities of Cape Town, South Africa, and the State University of New York at Buffalo. He is a former deputy vice-chancellor of the University of Cape Town, where he remains an emeritus professor in Education and African Studies and the former Chief Executive Officer of the Human Sciences Research Council. He has an honorary appointment at the Nelson Mandela University. His publications in the areas of social difference, culture, education policy, comparative education, educational change, public history, and popular culture include four books, six edited collections and over 220 articles, reviews, reports, and book chapters. He has an A-rating in the South African research system. He is involved in a number of local, national and international social and cultural organisations and is chairperson of the Independent Examinations Board, former chairperson of the District Six Museum Foundation, a former president of the World Council of Comparative Education Societies, and has served as the chair of three Ministerial Committees of Enquiry, including the Ministerial Committee on Transformation in Higher Education and the Ministerial Committee to Evaluate Textbooks for Discrimination. He is a fellow of the International Academy of Education, the African Academy of Science, a member of the South African Academy of Science and a Senior Fellow of NORRAG, the Graduate Institute.

**Dr. Vijay Reddy** is a Distinguished Research Specialist at the Human Sciences Research Council (HSRC). She assumed this position after serving as the Executive Director for 12 years (2006–2018) of the Education and Skills Development Research Programme. The three major thrusts of her research are: large scale achievement studies, skills planning and publics' relationship with science. She co-ordinated the South African component of the Trends in International Mathematics and Science Study since 2003. Her publication, *Making Global Research Locally Meaningful*, best reflects her stance related to international achievement studies. She led the multi-year Labour Market Intelligence Partnership Project to support the establishment of the Skills Planning Mechanism for Post School Education and Training. The analytical approach framing the studies represents a departure from manpower forecasting and tries to understand the complexities and intricacies around how supply and demand interact in the South African society and economy and then draw implications for reform. Her research on the Publics and Science aims to periodically measure the attitudes and views of the public to science, as well as the shaping influences, to establish the unique fingerprint of the South African public relationship with science.

**Ms. Jaqueline Harvey** is a Ph.D. intern in the Inclusive Economic Development (IED) research programme at the Human Sciences Research Council and is completing her Ph.D. in Psychology through the University of South Africa. Her research is primarily situated in the educational neuroscience and psycholinguistic domains, and she holds undergraduate degrees in psychology and neurophysiology from the University of Pretoria and an MA in Psychology with specialisation in Research Consultation from the University of South Africa. Ms. Harvey is the co-author of several journal publications, book chapters, and reports relating to the role of language in education and in inequality. She is also a co-author on journal publications and reports because of her work on the Trends in International Mathematics and Science Study (2015 and 2019 cycles) and on the Youth into Science Study projects.

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# Chapter 13

## COVID-19 and U.S. Schools: Using Data to Understand and Mitigate Inequities in Instruction and Learning



Laura S. Hamilton and Kadriye Ercikan

**Abstract** Shortly after the COVID-19 pandemic arrived in the United States, schools across the country had to enact significant, rapid changes to their instructional models, and schools varied widely in their access to the resources needed to support these efforts. Researchers across the U.S. quickly launched surveys, website reviews, and other data-collection methods to document these shifts. In this chapter, we draw on this research to describe the U.S. K-12 educational context, the policies states adopted, the practices and resources schools offered, and the potential effects on students' academic, social, and emotional learning. In these discussions we draw particular attention to inequities in educational opportunities across schools serving different student populations. We then discuss how different sources of data will be needed to help identify educational needs and mitigate disparities in instruction and learning post-pandemic.

### 13.1 Introduction

In the U.S., the announcement of the COVID-19 pandemic by the World Health Organization in early March 2020 brought the significance of this health crisis to national attention. A combination of factors, including a fractured media landscape, low levels of trust in institutions, and lack of coordinated messaging across different levels of government resulted in widespread disagreement among Americans about the severity of the pandemic and how they should respond to it (Ipsos, 2020; Kavanagh, 2020). Moreover, there was slow recognition of the pandemic as a national emergency and limited guidance for and attention to the unprecedented disruption in all sectors of society, including education.

This lack of clear, centralized guidance, combined with the U.S. education system's history of local control and the substantial differences in access to resources across schools and districts, led to wide variation in how schools responded to the pandemic (Audrain et al., This volume). Understanding these responses is crucial for

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L. S. Hamilton (✉) · K. Ercikan  
ETS, 660 Rosedale Road, Princeton, NJ 08541, USA  
e-mail: [lshamilton@ets.org](mailto:lshamilton@ets.org)

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informing future efforts to address the educational harms caused by the disruption to learning. Fortunately, researchers, education advocates, and others across the U.S. quickly launched data-collection activities to document schools' responses and the effects of the pandemic on educators and learners. These data will play an essential role in helping policymakers and practitioners identify what interventions and other resources need to be provided and which groups of learners have the most urgent need for these resources.

In this chapter, we draw on several of these data sources to describe (1) the K-12 educational context in the United States when the pandemic hit and state policies and guidelines for remote learning, (2) how school closures and shift to remote learning impacted students and teachers, and (3) the ways that data can help identify educational needs and inform policy and practice to mitigate disparities in instruction and learning.<sup>1</sup> The large number of data-collection efforts undertaken in the wake of the first school closures have provided timely and crucial information about the pandemic's effects. We do not attempt to review all these data sources for this chapter.<sup>2</sup> Instead, we draw on a small number of them to highlight some themes that are especially relevant to understanding the pandemic's effects on educational opportunities.

These data allow us to paint a broad picture of the pandemic's effects on educators and students and to identify potential sources of inequity. As we discuss throughout the chapter, however, the available data are insufficient for developing a thorough understanding of how the pandemic affected students' learning opportunities and how it is likely to affect their social, emotional, and academic development. The final section of this chapter builds on what we learned about the utility of existing data on responses to the pandemic in the U.S., offering guidance for policymakers and others to promote a more comprehensive strategy for tracking inequities in the short and longer terms.

## **13.2 The U.S. Public Education Context and Policy Response to COVID-19**

To make sense of schools' responses to the pandemic, along with the challenges they faced in pivoting to new instructional delivery models, it is important to understand the broader policy context and education landscape in which public schools in the United States were operating. Since the founding of the U.S. public education system, the federal role in influencing school policies and operations has been limited. Instead,

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<sup>1</sup> Although this chapter focuses on K-12 public schooling in the United States, the pandemic significantly disrupted other educational institutions including colleges and universities (see [https://www.crpe.org/sites/default/files/final\\_ep\\_postsecondary\\_synthesis.pdf](https://www.crpe.org/sites/default/files/final_ep_postsecondary_synthesis.pdf) for a discussion of implications of the pandemic for postsecondary education).

<sup>2</sup> A regularly updated list of surveys is available here: <https://www.evidence-project.org/find-research/surveys>.

state and local (i.e., district) agencies and school boards have primary responsibility for setting school policy. Moreover, systems of school funding rely heavily on state and local taxes, resulting in substantial inequities in school funding that favor schools in wealthier communities (Baker & Corcoran, 2012; Ercikan & Elliott, 2015). Thus, when COVID-19 arrived on American shores, students were already experiencing unequal educational opportunities, with students of color and those from low-income families having less access to high-quality learning opportunities than other students (National Academies of Sciences, Engineering, and Medicine, 2019).

These pre-existing inequities and the lack of a strong federal role in education provide important background for understanding the pandemic's effects. In the next section we briefly describe relevant aspects of the educational context as the pandemic started disrupting education, including school and family access to technology that could support remote learning. We then summarize the instructional policies that states, districts, and schools adopted in response to this disruption. This overview is intended to lay the groundwork for the subsequent discussion of the impact of the pandemic on instruction learning.

### ***13.2.1 Educational Context in the Early Phases of the Pandemic***

Policies regarding when and how to shift operations in response to COVID-19 varied greatly across states and school districts in the U.S. Starting the second week of March 2020, schools on the East Coast of the U.S. closed their buildings and transitioned to remote learning. Within a few weeks, school closures expanded to other parts of the country, resulting in closures of at least 124,000 of the estimated 132,000 U.S. public and private schools. These closures were expanded through the end of the 2020 academic year in 48 states and affected over 50 million public school students (Education Week, 2020).

The sudden transition to remote learning<sup>3</sup> has been marked by disparities among schools. Schools in the poorest neighborhoods experienced the most significant challenges in moving to remote teaching and learning, exposing deep inequities that exist in the American education system. Examples of such challenges were observed in the state of Michigan. In this state, school districts were given flexibility of implementing different forms of remote learning, including delivering learning and instruction through cell phones, online classes, and by mailing materials to homes. In Detroit, one of the poorest school districts in Michigan and in the country, when schools closed in March, nine out of 10 students lacked access to digital devices (e.g., tablets or computers) and also lacked internet access (Associated Press Wire Content, 2020).

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<sup>3</sup> Throughout this chapter, we use the phrase “remote learning” to refer to schools’ provision of instructional materials and learning supports (including online instruction) outside the school building. Remote learning is sometimes referred to as “distance learning” or “distance education.”



The severity of the challenge was recognized by the state, which invested \$23 M to get 51,000 Detroit students tablets by late April.

In addition to access to digital devices for remote learning, access to the internet has been another significant barrier to learning opportunities. Lack of internet access is not rare in the U.S. In February 2020, shortly before the first known cases of the pandemic in the U.S., the BroadbandNow research estimated that 42 million Americans did not have access to internet (Busby & Tanberk, 2020). Nationwide, 13% -26% households did not have access to internet in major cities in the U.S., with Memphis (26%) at the top, and New York city (13%) at the bottom. The combination of access to devices and internet can magnify the challenge of delivering instruction and learning to students at home.

As expected, the challenges associated with device and internet access affected school districts serving large proportions of low-income students at greater levels than other districts. Education Week conducted a survey of 2,600 teachers and school district leaders, first during the period of March 24–25, and a second round on April 7–8. The survey findings indicate enormous differences between school contexts that serve low-income students and others. In particular, 64% of school district leaders in school contexts with 75% or higher percentage of students from low-income backgrounds reported that technology access was a major problem, compared to 21% of district leaders in school contexts with 25% or fewer low-income students (March 24–25, 2020 data).<sup>4</sup>

### ***13.2.2 Policies for Remote Learning***

In April 2019, the Center on Reinventing Public Education (CRPE) reviewed information provided on district websites for 100 districts across the country (Dusseault, Heyward, Jochim, & Pillow, 2020). These districts served close to 10 million students, covered 50 states and 7 U.S. territories, and included the 30 largest districts in the country.<sup>5</sup> Within a month of the COVID-19 pandemic this review revealed that even though the states made efforts to provide guidance and resources to districts, they fell short of providing clear expectations or adequate instructional resources to support remote learning or to remediate lost learning opportunities. Fifteen out of 50 states provided no directives requiring remote learning, leaving plans up to the local districts. In 29 states, state departments of education required districts to provide remote learning. However, little to no guidance or instruction was given for what

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<sup>4</sup> These statistics are based on an online survey conducted by Education Week (<https://www.edweek.org/technology/the-disparities-in-remote-learning-under-coronavirus-in-charts/2020/04?print=1>). Specific details about the sampling and weighing are unavailable. Our inclusion of data from this survey is intended to demonstrate the severity of the differences in some contexts, but the results should not be interpreted as being nationally representative.

<sup>5</sup> CPRE has continued to update this database and expanded it to include a nationally representative sample of 477 districts: <https://www.crpe.org/publications/getting-back-school-update-plans-across-country>.

was meant by remote learning. For example, Maryland required districts to provide remote learning but did not define what “remote learning” should include. Iowa removed requirements for instruction as long as districts provided a plan for “any methodology used to extend learning beyond brick-and-mortar district building.” Half of the districts in CRPE’s review did not require any remote learning plans.

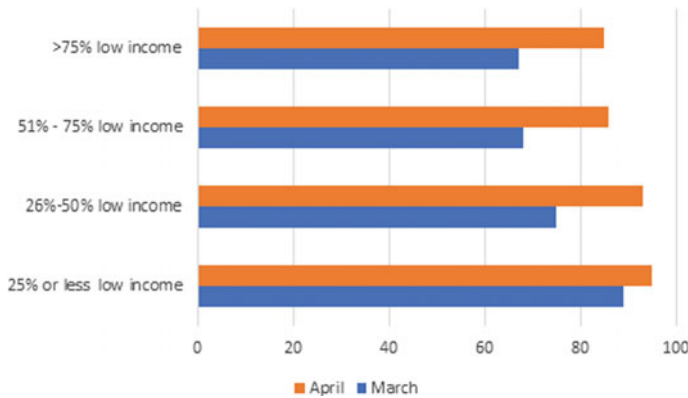
In keeping with the long tradition of state and local control in the U.S. public education system, there was great variation in states’ approaches to providing guidance on what kinds of learning experience districts must offer. For example, the state education agency in Delaware required districts to provide detailed plans for their remote learning, including number of hours and days, by grade. A less directive approach was followed by the Alabama Department of Education, which provided a checklist of instructional delivery options, their curriculum providers, and the mechanisms of instruction.

CRPE’s review showed lack of clear guidance by state departments of education on remote learning, along with lack of centralized efforts in providing resources for supporting districts and schools in most states. This context, combined with existing disparities in education resources and the societal inequities in general, created a perfect storm for school-level decision-makers. In the next section, we summarize data on instruction and learning, beginning with a description of the opportunities schools provided for students to learn during the pandemic.

### **13.3 Impact of COVID-19 on Instruction and Learning in U.S. K-12 Schools**

Although many of the short-term—and certainly the longer-term—impacts of the COVID-19-induced disruptions to education remain to be seen, early data suggest numerous troubling signs. The pandemic affected virtually all the nation’s K-12 students in some ways, and its effects are likely to be especially pronounced for groups of students who have been underserved by the education system in the past, given the longstanding, systemic inequities that had deprived these students of resources available to their more-advantaged peers.

In this section, we first summarize data on how opportunities for students to participate in education changed as a result of the pandemic, focusing on public schools serving students in grades kindergarten through twelve. We also present some data on how responsibilities for provision of instruction shifted from institutions to families and discuss potential implications of this shift for equity. We then discuss research that provides suggestive, early evidence on how these disruptions to schooling might have affected student learning. We conclude this section by exploring likely longer-term effects on students’ learning and well-being. Although we focus this discussion on instructional opportunities, it is important to recognize that schools in the U.S. provide social services, including meal provision and mental and physical healthcare, and that schools also serve as many families’ childcare providers. We do not address



**Fig. 13.1** Percentage of teachers engaging in any kind of instruction during school closures, by school-level family income in March and April 2020

these aspects of schooling due to space limitations, but they are important considerations for understanding the pandemic's broader effects on schools, students, and families.

### 13.3.1 *Opportunities to Learn During Widespread School Closures*

#### *Shifts in Instruction during COVID-19*

In the early phases of the pandemic, in addition to variations in access to digital devices and internet, there was significant variation in how teachers engaged and interacted with students online (Herold, 2020). Based on the Education Week survey, only 67% of teachers in schools serving high percentages of low-income students were engaging in any kind of instruction during school closures in March, whereas in schools with less than 25% low-income students, 89% of teachers engaged in instruction.<sup>6</sup> By April, in all school settings instruction increased, though the disparities between lower-income schools and others remained. The lower rates of online instruction were accompanied by lower rates of in-person instruction and online opportunities for learning for low-income schools (see Fig. 13.1).

The rapid shift to remote learning and the lack of universal access to technology almost certainly resulted in changes in curriculum coverage and other features of typical school-based instructional programs. Indeed, fewer than half of school principals reported having a plan in place pre-pandemic to deal with prolonged school closures, and many lacked other supports for remote learning, such as online learning

<sup>6</sup> As noted earlier, the data from the EdWeek survey are intended to describe inequities in learning opportunities or resources, but they should not be interpreted as national representative.

management systems or relevant teacher training (Diliberti, Schwartz, Hamilton, & Kaufman, 2020).<sup>7</sup> Even after schools shifted to remote learning, both teachers and principals reported significant gaps in training and other supports for remote learning, and they were especially in need of additional training to support students with disabilities and other groups with special needs (Hamilton, Kaufman, & Diliberti, 2020).

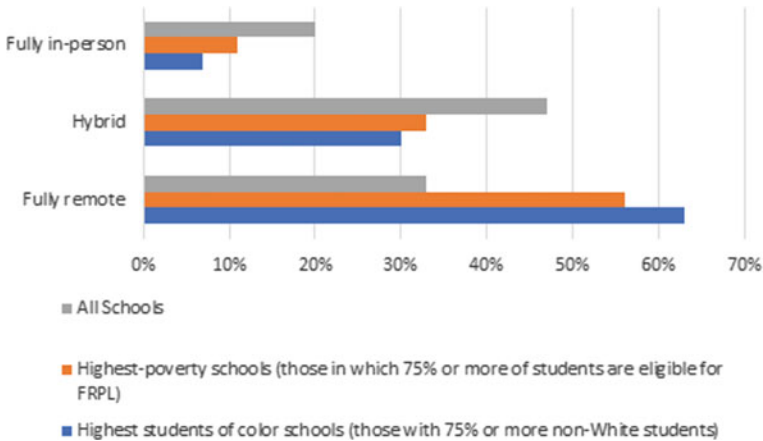
The near-universal closures of schools to in-person learning in spring 2020 was followed in fall 2020 by a variety of instructional delivery models. Some schools continued to provide fully remote instruction while others opened to fully in-person learning, at least temporarily. Hybrid models in which students split their time between in-person and remote learning became common, and in some schools, students or their families could choose from among various modes. Because of the planning and resources required to engage in fully in-person or hybrid models, students in under-resourced schools were less likely to have those opportunities (Diliberti & Kaufman, 2020). Data from RAND's American Educator Panels reveal that smaller percentages of schools serving high proportions of low-income students (regardless of racial/ethnic composition) and those serving high proportions of students of color offered hybrid or fully in-person options compared with the full sample of schools (see Fig. 13.2).

Although we lack detailed national data on teachers' pedagogical practices or the content they covered during the pandemic, survey data provide some evidence regarding the basic features of that instruction. In surveys administered at various time points during the pandemic, teachers reported that they spent more time reviewing old content and less time presenting new content than they had in the past, they were less likely to assign letter grades or provide feedback on student work, they interacted with their students less, and they were unable to reach all of their students or students' families (Diliberti & Kaufman, 2020; Hamilton, Kaufman, & Diliberti, 2020; Kurtz, 2020; Lieberman, 2020). Only 12% of teachers reported in spring 2020 that they were able to cover all or most of the curriculum they would have covered had schools remained open, suggesting the potential for widespread gaps in student knowledge and skill development (Hamilton et al., 2020).

Reviews of school and district websites provide additional information about instruction during the pandemic. These websites are often a primary means of communicating with all stakeholder groups and can shed light on factors such as scheduling, grading policies, digital tools adopted, and attendance-tracking methods. An analysis of a nationally representative sample of school websites (Harris et al., 2020) found that the extent of schools' personalization and engagement (e.g., use of live, synchronous instruction, provision of feedback on student work) was positively associated with local internet access but did not relate to schools' racial/ethnic composition or socioeconomic status. The district website review by CRPE shows some

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<sup>7</sup> Throughout this section, we report several results from RAND's American Educator Panels, which provide nationally representative estimates of responses of U.S. public school teachers and principals to survey questions about practices, working conditions, and other policy-relevant topics. See [www.rand.org/aep](http://www.rand.org/aep) for details about the panels, including sampling and weighting methodology.



**Fig. 13.2** Disparities exist in which students received remote instruction in Fall 2020. *Note* This figure is based on the following survey question to school principals: “Which of the following most closely reflects how instruction is provided to students at your school as of today?” Principals were asked to select from the following response options: “Fully remote instruction, where a large majority or all students receive at least one synchronous class each school day”; “Fully remote instruction, where a large majority or all students receive less than one synchronous class each school day (i.e., instruction might be distributed via paper workbooks or asynchronous videos)”; “Hybrid model, where a majority or all students receive some in-person instruction and some remote instruction”; and “Fully in-person instruction each school day for the majority, if not all, students.” FRPL stands for free or reduced-price lunch, a common but somewhat coarse indicator of low income. *Source* Diliberti and Kaufman (2020), Creative Commons Attribution 4.0 International License. Technical details including survey administration and weighting methods are provided in Kaufman et al., (2020)

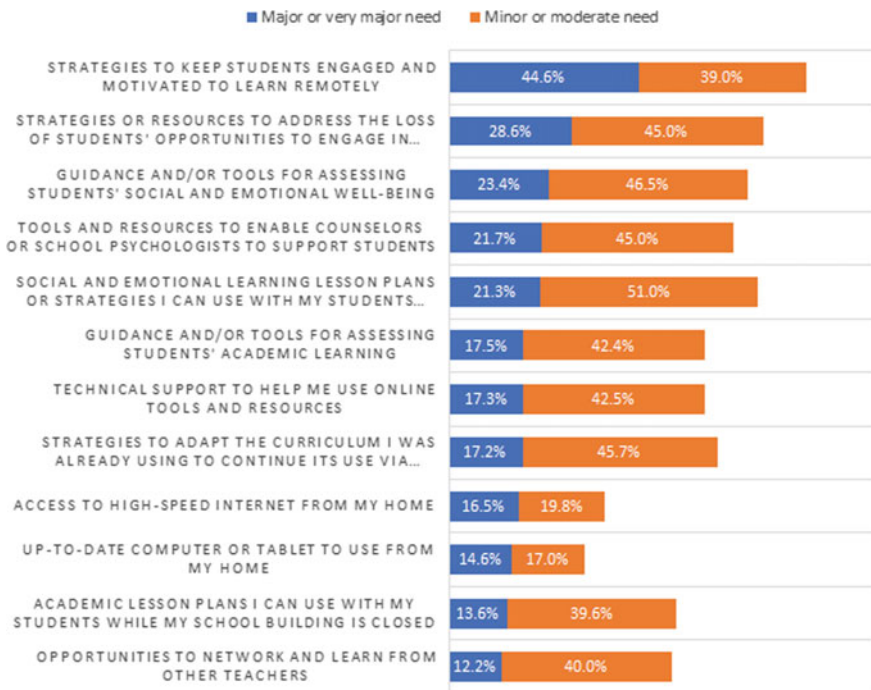
system-level conditions that are aligned with school staff survey responses, particularly regarding inadequate resources and supports for vulnerable student populations including students with disabilities (CRPE, undated). Their longitudinal analysis indicated that districts’ strategies and resources improved from spring to fall 2020 but that districts continued to struggle to provide technology and keep track of all their students. An additional concerning set of statistics comes from a separate review of school district websites that estimated lost instructional time (Malkus, 2020). The study found that between March 2020 and the end of the 2019–2020 school year, students in the most economically disadvantaged districts lost 20 days of instruction on average, and even the most economically advantaged lost 16 days during the same period. This lost time was due to a combination of cancelled instructional days and student nonparticipation in instruction.

Together, the data summarized above point to widening opportunity gaps across schools. But because these data do not provide information about differences in students’ experiences within schools or classrooms, we are unable to assess the full impact of the pandemic on inequity. Even within the same classroom, some students will have received higher-quality instruction than others due to factors such as their ability to access remote instruction from home or their opportunities to study in

quiet, sufficiently spacious environments. We return to the need for better data on within-school differences later in this chapter.

*Addressing Educators’ Needs*

Both teachers and principals have reported needing a wide range of supports for teaching and learning during the pandemic, including additional resources related to both academic instruction and broader student and educator well-being. One of the most significant needs, according to teachers, was strategies to keep students engaged and motivated to participate in remote learning, as shown in Fig. 13.3. Sizable percentages of teachers also expressed a major need for strategies to address the loss of hands-on learning opportunities, guidance or tools for assessing students’ social and emotional well-being, and tools and resources to enable counselors or school psychologists to support students. Moreover, 68 percent of teachers reported that the well-being of their students was an area of major concern, and another 26 percent described it as a moderate concern (Hamilton et al., 2020). These responses demonstrate that teachers’ concerns for their students extend well beyond academic



**Fig. 13.3** Percentages of teachers indicating need for support from their District or school in each of the following areas, Spring 2020. *Note* This figure is based on the following survey question: “Please indicate your current level of need for additional support from school or district leaders in each of the following areas.” Response options were “No need,” “Very minor need,” “Moderate need,” “Major need,” and “Very major need.” *Source* Hamilton et al., (2020), Creative Commons Attribution 4.0 International License

performance. Many teachers also indicated a need for assessments, both for academic achievement and social and emotional well-being.

Interest in student well-being was not limited to teachers. In spring 2020, principals were more likely to report at least a “major need” for SEL instructional materials than for academic materials (Hamilton & Opfer, 2020). And 60% of district leaders in the fall 2020 American School District Panel Survey reported that addressing students’ SEL and mental health needs was an area for which they had the greatest need for support—higher than any of the other needs included in the survey (Schwartz et al., 2020). Addressing students’ SEL needs can be especially challenging when opportunities for in-person interaction and relationship-building are so limited. Elimination of non-academic activities such as classroom parties or extracurricular activities has understandably received less attention than changes to academic instruction, but these can be a valuable source of social, emotional, and academic development, and their absence in students’ school lives results in additional missed learning opportunities.

It is important to recognize that teachers’ capacity to support their students is influenced by teachers’ own well-being (Hamilton & Doss, 2020; Oberle & Schonert-Reichl, 2016), and surveys suggest that the pandemic harmed teachers’ well-being in several ways. Majorities of teachers surveyed in spring 2020 identified the following factors as areas of moderate or major concern: their own health or the health of loved ones (75%), responsibilities to care for their own children or other loved ones (59%), and feelings of burnout (54%) (Hamilton et al., 2020). By fall 2020, a full 80% of teachers reported burnout as a moderate or major concern, and roughly one quarter reported that they were likely to leave the teaching profession (Diliberti & Kaufman, 2020). As the pandemic dragged on, its negative effects on teachers’ well-being continued to mount, as evidenced by the three-quarters of teachers who reported in an EdWeek survey of 817 teachers in November 2020 that their morale was lower than before the pandemic (Will, 2021). School principals, too, reported struggling with low morale and anxiety (Brackett, Cannizzaro, & Levy, 2020). It will be important for those who support schools to keep these data in mind and recognize the value of addressing the well-being of both students and educators.

### *What Families are Saying*

Considering the growing role that families have played in providing time and space for schooling, if not delivering instruction themselves, any predictions about educational effects of the pandemic would be incomplete without considering the challenges facing families. Surveys of families have revealed widespread concerns about students falling behind in school, and those whose children attended school partly or fully remotely were more likely to express these concerns than parents whose children received in-person instruction (see Jochim, Gundapaneni, & Pangelinan, 2020, for a synthesis of numerous family surveys).

These concerns are undoubtedly attributable in large part to the challenges families and students have encountered. The Understanding America Study, a nationally representative household pulse survey project, has tracked the perceptions of K-12 students’ families, finding that access to supports such as devices and internet

improved from spring to fall 2020 but that many students still lacked access to a device they could use consistently or to reliable internet service (Saavedra, Rapaport, & Silver, 2020). This was especially the case for students of color and those in low-income households. In addition, although majorities of parents were satisfied with the instruction their children's schools provided, parents of students of color and lower-income students reported greater concerns about several aspects of schooling, including access to social supports, than other parents (Jochim, Gundapaneni, & Pangelinan, 2020).

Among families of students whose schools were not offering fully in-person instruction, more than ten percent reported participating in "learning pods"—groups of students who learn together with support from one or more family members, tutors, or teachers. These pods have the potential to further exacerbate inequities, especially if more-affluent families have better access to networks and resources to support pods. However, the practice was more commonly reported by less-affluent families (Saavedra, Rapaport, & Silver, 2020). Many families have also switched schools or at least considered doing so, and again we see gaps, with affluent families more likely to consider private schools or full homeschooling and less-affluent families more likely to enroll students in charter schools. These changes to students' learning environments and the accompanying differences by race or economic status complicate efforts to monitor students' learning opportunities and mitigate opportunity gaps.

### ***13.3.2 Likely Short-Term Effects of the Pandemic on Student Outcomes***

The previous discussion highlighted the substantial challenges that schools faced and the widespread disparities in students' opportunities to participate in high-quality educational environments. Even if schools returned to their pre-pandemic status by the start of the 2021–2022 academic year, some scholars predicted that the effects of the missed learning opportunities in spring 2020 and during the 2020–2021 school year will result in long-term, if not lifelong, disadvantage for the generation of K-12 students who experienced the pandemic (OECD, 2020). Our ability to understand effects on students' academic learning and other outcomes is limited by a lack of high-quality data in addition to the short timeline, but evidence from earlier work on topics such as online learning and effects of natural disasters provides some basis for speculating about what is likely to happen, and more recently gathered data offers an early look at the pandemic's effects.

#### *What we Can Infer from Pre-Pandemic Student Achievement Data*

The unprecedented nature of COVID-19's impact on schools across the U.S. precludes any effort to draw strong inferences about likely effects on learning from pre-pandemic data. The most relevant evidence comes from two bodies of research on conditions that share at least one feature with the current context. First, scholars



have turned to data on students' academic achievement trajectories over summer break to predict what might happen to students who receive no instruction for weeks or months (Kuhfeld et al., 2020). Recent research suggests that differences in summer learning are not as great a contributor to racial/ethnic and socioeconomic achievement gaps as once thought (von Hippel & Hamrock, 2019) and that there is extensive variation in summer learning trajectories that is not easily explained by measurable demographic characteristics such as race/ethnicity or socioeconomic status (Atteberry & McEachin, 2020). In fact, the magnitude of this variation can exceed what is seen during a typical school year (Kuhfeld et al., 2020). This work suggests that the learning trajectories of individual students during school closures will differ substantially, but the sources of these differences are not clear from existing research. Of course, most students received at least some instruction while schools were closed in spring 2020, and even more did in fall 2020. Thus, the relevance of these summer learning trends is somewhat limited.

A second data source that might be more relevant, particularly when it comes to instructional delivery, is data gathered from students who participated in fully virtual schooling. Research has consistently linked students' participation in fully virtual schools to lower rates of learning in several academic subjects, relative to the performance of similar students attending in-person schools (Ahn & McEachin, 2017; Fitzpatrick et al., 2020; Woodworth et al., 2015). The reasons for these differences are not clear but are likely to stem in part from high student–teacher ratios that limit students' contact with teachers, challenges associated with monitoring and promoting student engagement in learning, and the inability of students with special needs to participate fully in online instruction (Gill et al., 2015). As we discussed above, these concerns are similar to ones that have arisen during COVID-19 remote learning, so the lessons from this body of research have clear relevance. At the same time, the instructional models schools adopted in response to the pandemic are almost certainly unlike the intentional, online-only models that most fully virtual schools have adopted, and the virtual schooling sector tends to serve a group of students that is not representative of the U.S. population of public-school students.

Kuhfeld and colleagues (2020) present additional relevant research on achievement effects of school absences, weather-related closures, and school disruptions stemming from natural disasters. The findings generally indicate negative effects of not being in school, but none of these situations closely match the COVID-19 context. Moreover, the COVID-19 period coincided with the widely publicized Black Lives Matter protests that brought significant attention to racial injustice. As Kuhfeld et al. (2020) point out, past research on killings by police suggests reason to believe these recent events could contribute to COVID-19's negative effects on student achievement. Together, prior research points to a high probability of significant missed learning opportunities resulting in lower achievement test scores than students would have attained under more normal circumstances, but the magnitudes of these likely effects, and their relationships with pre-existing achievement disparities, are unclear.

### *What we are Learning from Early Data in the COVID-19 Era*

Fortunately, data on how students are performing during COVID-19 are starting to become available. Using NWEA MAP<sup>©</sup> Growth<sup>™</sup> assessment data for approximately 4.4 million students, Kuhfeld and colleagues examined fall 2020 reading and mathematics scores for students in grades three through eight, comparing them to the scores of students in the same grades in fall 2019 (Kuhfeld et al., 2020b). Their findings paint a somewhat more promising picture than the estimates discussed in the previous section: students' reading scores in fall 2020 were similar to those in fall 2019, whereas their math scores were roughly 5–10 percentile points lower in 2020 than in 2019. The findings suggest students' growth in math achievement was lower during the 2019–2020 school year than it would have been in a typical year. The authors note although the assessment was administered both remotely and in-person, there was a fairly high rate of missing data that disproportionately consisted of students of color, those with relatively low prior achievement, and those in schools that served large proportions of economically disadvantaged students. The likelihood that these groups of students are the ones most vulnerable to negative effects of the pandemic creates a reason to be less optimistic than the initial findings might suggest.

There is also evidence of negative effects on another measure of students' academic performance: course grades for many students are lower than before (Strauss, 2020). In addition, survey data make it clear that teachers have concerns about their students' learning. In the RAND fall American Teacher Panel survey, for instance, approximately a quarter of teachers said that most of their students were significantly less prepared to participate in grade-level work in fall 2020 than they had been at the same time last year, and these percentages were higher in schools serving majorities of students of color and economically disadvantaged students (Diliberti & Kaufman, 2020). Given the continued impact of the pandemic on school operations and the probable need for significant acceleration of learning to ensure that students get back on track, it will be crucial to monitor achievement test scores, grades, and other measures of student performance over the coming years.

### ***13.3.3 Potential Longer-Term Effects on Student Learning and Well-Being***

The findings discussed above begin to fill in some of the gaps in our knowledge about the pandemic's effects, but what we do not yet know swamps what we do. We have not yet been able to examine the learning trajectories for different groups of students as conditions for learning in both schools and homes have shifted, and we do not know how persistent the effects of the pandemic on academic learning will be. Moreover, we know almost nothing about national and subgroup trends in areas that are not measured by existing academic achievement tests, including social and emotional learning as well as academic performance in non-tested subjects and grade levels. Finally, much of the existing research relies on a small set of tests that

are particularly well-suited to examining learning trajectories but that do not capture the full range of competencies that students typically develop in their mathematics and reading classes.

Although these gaps in our knowledge make predictions difficult, existing data provide reasons for both concern and optimism. The group disparities in learning opportunities and outcomes discussed above are a source of significant concern: Unless policies and funding are intensively targeted toward supporting the students who suffered most from the effects of the pandemic, it is likely these disparities will remain, with significant consequences for students' opportunities to pursue high-quality postsecondary education or rewarding careers once they complete their K-12 education. Beyond academics, these indicate the potential for negative effects not just on students' mental health and well-being, but that of educators as well.

Despite this relatively gloomy outlook, a few bright spots provide some reason to believe that the pandemic could lead to better, more equitable learning opportunities if we respond constructively to what we are learning. One reason for optimism is that despite innumerable challenges, educators across the U.S. and at all levels of the education system sprang into action to shift instructional models in significant ways and with unprecedented speed (Hamilton & Opfer, 2020). The dedication that many educators displayed, and their willingness to try new strategies for connecting with their students, are promising signs for a post-pandemic education system—provided teachers receive the necessary supports, including training and working conditions, to sustain their work. These instructional shifts also spurred some innovations in remote-learning technologies along with increased attention to the factors that contribute to effective remote learning, such as family engagement and high-quality assessments. For instance, some educators experimented with breakout rooms in videoconferencing software or with virtual-reality platforms to facilitate small-group interactions (Allen, 2020).

In addition, although remote learning did not work well for all students, in some cases students appeared to perform better in their new home-learning settings and to enjoy school more as a result of conditions like reduced distractions or increased flexibility (Gilman, 2020). Teens, in particular, fared better than we might have predicted, according to a survey of approximately 1500 adolescents conducted in summer 2020 (Twenge et al., 2020). On average, these teens reported lower rates of loneliness and depression, less use of social media, and more time spent sleeping and engaging in activities with family members compared with pre-pandemic results—though, as with all the data we have discussed in this chapter—results varied significantly by respondent characteristics and should not be interpreted as evidence of a generally salutary effect.

A final reason for hope is that when schools closed their doors and families lost access to crucial supports, other community-based organizations such as afterschool programs often stepped in to help, offering resources such as a summer learning toolkit developed by the Denver Afterschool Alliance.<sup>8</sup> Combined with the increased

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<sup>8</sup> [https://www.denvergov.org/content/dam/denvergov/Portals/713/documents/provider-tools-summer-planning\\_covid-19/DAA\\_SummerProgramToolkit\\_COVID-19\\_2020.pdf](https://www.denvergov.org/content/dam/denvergov/Portals/713/documents/provider-tools-summer-planning_covid-19/DAA_SummerProgramToolkit_COVID-19_2020.pdf).

family involvement in instruction, these connections might lead to a deeper appreciation among policymakers that schools cannot meet all students' needs on their own and that partnerships among families, schools, and other community organizations should be prioritized as part of a strategy to ensure equity and opportunity for all.

These small silver linings in no way compensate for the significant, widespread interruption to learning that most students experienced and that disproportionately affected students who lacked access to well-resourced schools before the pandemic. Up to this point, this chapter summarized what we have learned about COVID-19's effects on learning in the U.S. public school system. In the next section, we discuss how the research and policy communities can contribute to better information and solutions going forward.

### **13.4 Advancing Measurement and Data Systems to Promote Equitable Opportunities in the Wake of the Pandemic**

The widespread loss of learning opportunities, combined with substantial disparities in access to high-quality supports for learning and well-being, point to a need for both continued monitoring of opportunities and outcomes along with a well-coordinated, ambitious effort to ensure widespread access to needed supports for all students. Providing a comprehensive overview of what these supports should be and how they should be deployed is beyond the scope of this chapter, and we refer readers to other sources of such guidance.<sup>9</sup> We instead discuss a particular need that educators and policymakers face as they attempt to recover from the wreckage of the pandemic—the need for high-quality data to mitigate harms while creating new, improved learning opportunities in the coming years.

The significant changes in when, where, and how learning occurs will have long-term effects even after the pandemic ends (Schwartz et al., 2020), and educators will need new ways of monitoring learning in non-traditional settings, along with sources of data that provide consistent information about student learning. As harmful as COVID-19 has been to students, families, and educators, its effects on the educational landscape provide an opportunity to rethink what and how we measure learning opportunities and outcomes. In this final section of the chapter, we highlight some of the most important ways in which measurement can be applied to promote equitable, high-quality learning for all students.

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<sup>9</sup> The Evidence Project provides a compilation of guidance for educators and education policymakers on a variety of topics: <https://www.evidence-project.org/resources#h.9mn3z9wphw1>.

### ***13.4.1 Monitoring Opportunity to Learn***

Data on opportunity-to-learn (OTL) will be more important than ever given the widespread shift to different modes of schooling (Marion, 2020). Efforts to address students' learning needs will require understanding the learning environments they have experienced, both at school and elsewhere, and the gaps in their exposure to grade-level content and other instructional supports. And data will need to reveal not just between-school differences but also differences in students' access to instruction within schools and even within the same classroom.

Monitoring OTL requires ongoing collection of data on the kinds of instructional activities in which students engage and the learning resources to which they have access. The expansion of learning in digital environments is likely to continue to influence instruction post-pandemic. An advantage of many digital learning environments is the explicit documentation of implemented curriculum and instruction and the opportunities to observe student engagement in learning activities. For OTL data to inform practice and policy, features of digital learning and student engagement will need to be systematically measured and analyzed at student, classroom, and higher levels. In addition, the digital learning resources can be examined to identify the degree to which these resources covered targeted curriculum and learning outcomes.

Another source of OTL data is documentation of student learning activities in the log files that many software packages generate. Such log data can provide information about whether and when students log onto learning environments, how much time they spend on different activities, and how they navigate through the learning activities, among other types of engagement with the learning environment. All these data about students' interactions with learning tools can help evaluate the degree to which and how students have been engaging in the digital learning resources on an ongoing basis. In light of the earlier discussion of challenges related to student engagement and access to remote instruction, such data could help policymakers and education leaders target resources to the students who are most in need of additional learning support.

### ***13.4.2 Monitoring Learning Outcomes to Inform Policy and Practice***

In general, assessments at all levels need to be considered with their targeted uses and impact in mind. In the current educational context, dire educational needs and the role of assessment in meeting those needs should determine which, how, and when assessments are conducted. Two educational needs are of primary relevance: (1) the learning opportunity loss due to school closures; and (2) growing disparities in learning outcomes for students from different racial/ethnic and socioeconomic

backgrounds. We highlight key information requirements and the role of educational assessments for both of these needs below.

*Information needs and role of assessment for addressing learning opportunity losses*

Currently we do not have adequate information about the degree of learning opportunity losses and how they varied across student groups and at individual student levels. Addressing these losses requires actions at the individual student level as well as the group and system levels. Accordingly, different types of assessment information are needed for these uses. In particular, to address individual student needs, educators will benefit from assessment information that is tied to students' ongoing learning activities and that provides fine-grained information about how students progress through the curriculum. Such an intended use is referred to as *formative assessment* and requires the assessments to be closely tied to instruction both in terms of what they assess but also with respect to when the assessment is conducted and how the assessment information is used. Greater use of digital platforms for learning and assessment can facilitate access to such types of assessments by teachers and students. These can be in the form of well-designed assessment tasks that can be embedded within learning activities.

In addition to formative uses of assessments, information is needed to inform policy and planning at classroom, district, and state levels. Well-designed, large-scale assessments at state levels can provide such information. Several aspects of these assessments are critical in order to meet such goals. Ercikan and Barclay-McKeown (2007) identify five requirements in order for large-scale assessments to guide educational policy and practice:

1. assessments need to assess valued outcomes;
2. assessments need to be aligned with learning, instructional, and curricular goals;
3. assessments need to provide accurate estimates of student knowledge and competencies;
4. reports of assessment results need to be informative and timely;
5. intended and unintended consequences of uses of assessment results need to be important considerations (p. 58).

Each of these requirements gain heightened importance and meaning in the current educational context as they are discussed below.

*Valued learning outcomes.* Focusing on valued learning outcomes such as problem solving and critical thinking, instead of recall of factual knowledge, has been the focus of great discussion in education for over several decades. In the current educational context, focus on these types of learning outcomes is important for effective preparation of students for higher levels of learning, preparation for higher education and careers. In addition, in light of the prevalence of misinformation and mistrust of evidence about COVID-19, and other natural, societal and political phenomena (Hamilton, Kaufman, & Hu, 2020; Kavanagh & Rich, 2018), other constructs such as civic knowledge, skills, and dispositions have particular relevance.

*Alignment.* In the current pandemic context, alignment with learning, instruction, and curricular goals requires a greater focus on OTL given the disparities in learning

opportunities. There is great research evidence that assessments that are not closely aligned with instruction and learning opportunities do not provide valid evidence of student learning (Ercikan, 2006; Moss, Pulin, Gee, Haertel & Young, 2008; Linn, Baker & Dunbar, 1991). This alignment is critical if the assessments are to inform and support learning.

*Accuracy of measurement.* Great disparities in opportunities to learn have added challenges for assessment with respect to the range of knowledge and skills the assessments need to cover and variations in student learning outcomes. These disparities require assessments to be adaptable for different levels of learning outcomes, with difficulty levels appropriate for student levels, and to provide accurate and generalizable information about student competencies.

*Reporting of assessment results.* Usefulness, interpretability, and timeliness of reports are critical for informing policies for addressing the impact of learning opportunity losses and closing disparities in learning outcomes. The reports need to provide actionable information at different levels of the education system to identify the degree of impact of the learning opportunity losses, which student groups, schools, and districts have been disproportionately impacted, at points in time in the school year for effective implementation of the policies.

*Intended and unintended consequences.* The focus here should be on designing assessments that will support intended consequences and avoid inappropriate interpretations and uses of assessment results, and therefore minimize unintended consequences. Informing strategies to mitigate learning losses should be the central focus of large-scale assessments. One aspect of supporting the intended uses involves assessments to allow comparisons of learning outcomes with previous years so that educators can identify the greatest gaps in students' knowledge and skill development. Having a pre-COVID-19 baseline will help users of the data understand the effects of the pandemic while also providing helpful information for addressing longstanding differences in performance.

Users of assessment data should be wary of ways in which assessment use can lead to inaccurate inferences and to potential harms for students or educators. Use of assessments for school or teacher accountability, in particular, has been associated with negative effects on instruction as well as threats to the validity of inferences that the scores will support (Ercikan & Barclay-McKeown, 2007; Koretz, 2008; Stecher et al., 2018). In the current context, risks associated with accountability uses of tests are exacerbated. An expert panel on assessment in the context of the pandemic laid out several key principles, one of which was "do no harm" (Lake & Olson, 2020). With disparities in digital device and internet access, in addition to educational support resources, the focus should be on using assessments to support learning and development of all students.

Those who mandate, administer, and use assessments must also consider the unique threats to validity that the pandemic has created. As we discussed earlier, efforts to track learning trajectories during the pandemic have been thwarted by incomplete data from students, including those who were unable to access the assessment remotely or have been unable to attend school at all. Other concerns include lack of validated approaches to assessing English learners, students with disabilities,



or other students who need assessment accommodations, as well as potential security threats to remote testing. A long-term investment in better assessment options will be needed to accommodate future shifts in instructional models, but in the meantime, users of test-score data will need to apply appropriate caution when interpreting the results.

### ***13.4.3 Monitoring Social and Emotional Learning***

The concern that teachers, principals, and district leaders expressed about promoting students' social and emotional learning (SEL) reflect a widespread understanding that all learning brings together aspects of students' academic, social, and emotional competencies (Aspen Institute, 2019). The expansion of instructional delivery into new modes and new settings could have implications for students' opportunities to establish supportive relationships and to develop competencies such as teamwork and self-regulation. A comprehensive approach to data collection to inform decisions about teaching, learning, and resource allocation should include both academic and SEL measures (Lake & Olson, 2020).

Selecting the right SEL measures and using them in ways that will benefit rather than harm students, can be especially challenging due to the lack of widely available, validated assessments, the minimal training most educators receive to assess SEL, and a lack of clear guidance regarding how to use the results of assessments to inform instruction (Hamilton & Schwartz, 2019). It can be especially difficult to find SEL assessments that are appropriate for all students, regardless of cultural background and other personal circumstances (Jagers et al., 2018). And of course, the remote-learning context creates additional barriers to SEL assessment.

As with the other types of assessment discussed above, the shift to remote learning, and the growing prevalence of digital instructional materials and communication methods, creates opportunities to re-evaluate traditional approaches to monitoring SEL. Informal data-collection practices such as regular individual check-ins between teachers and students can provide information that teachers can use to inform their decisions about SEL instruction while also enabling them to identify students who might be in need of additional resources such as counselors or other mental-health professionals. Educators have been creative about exploring new ways foster SEL, such as by encouraging student collaboration and teamwork through monitored breakout rooms in videoconferencing software. Moreover, a growing number of digital instructional tools are available to promote and assess SEL (see, for example, Zoo U<sup>10</sup>).

Beyond the resources provided to students, data on educators' social and emotional well-being is also crucial for monitoring educational opportunities. As we discussed earlier, educators' well-being can influence their instruction and can be associated with attrition, so it is inherently linked to the quality of student learning opportunities.

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<sup>10</sup> <https://www.centervention.com/zoo-u-sel-game/>



Online tools such as peer learning communities can help mitigate the stress associated with teaching (especially but not only during a pandemic), and inexpensive assessments approaches such as regular brief surveys can provide data on educators' emotional well-being so that policymakers and education leaders can intervene as needed.

It is important to monitor for mental-health problems in both students and educators, but this does not mitigate the need for asset-based, universal SEL that builds the competencies that all students will need for success in school, the workplace, and the broader community. Information about SEL should be gathered in an ongoing way rather than only at the end of a course or semester, when it might be too late to intervene. Finding ways to build SEL data collection into existing tools and assessment systems can help address time and resource constraints while providing educators and policymakers with crucial information to inform their work.

### 13.5 Conclusion

COVID-19 caught nations—including the United States, the wealthiest nation in the world—off guard in meeting the needs of their populations. As the schools closed, along with workplaces and businesses, the impact of shutting down the education systems were felt not only in well-being of students and teachers and learning outcomes, but in economies of all the countries. There is now much greater understanding and appreciation of the role of education in the development of children that goes beyond learning and facilitating opportunities for parents to participate in the labor market.

We propose data—on both student outcomes and learning opportunities—as key to addressing the short-term and likely long-term impact of COVID-19 on learning opportunity losses and on disparities in educational outcomes. As the modes and forms of learning change over time, as does the concept of schooling, there is a need for a continuous-improvement approach to trying out innovative data-collection and assessment strategies, monitoring their utility, validity, and fairness, and modifying them in response to evidence. Those who develop or deploy new assessments will face growing pressure to document validity, reliability, fairness, and utility of scores on these tests and to provide users of the data with supports and guidance to ensure appropriate interpretations and uses.

This data-informed approach will require coordinated action on the part of several groups. Policymakers and funders should explore ways to support both large-scale data collection for monitoring purposes and smaller-scale assessments for formative, instructional purposes, along with research and development to ensure that these data produce the best-possible evidence. Educators must gather and use data in ways that benefit all students, and organizations that support and train educators need to equip them to do so. Furthermore, students should be encouraged to share their perspectives and experiences. Thoughtful, judicious use of assessments that monitor students' academic, social, and emotional learning, as well as their learning environments, can

be a cornerstone of a broader strategy to help the education system not only recover from the pandemic, but thrive in the post-pandemic era.

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**Laura Hamilton** is associate vice president of research centers at ETS, leading a portfolio of research on assessment and learning related to K-12 and postsecondary education and workforce development. She also serves as the Eignor Executive Editor at ETS. Prior to joining ETS, she served as distinguished chair in learning and assessment at RAND and directed the RAND Center for Social and Emotional Learning Research. Her work has focused on learning and assessment of academic, social, emotional, and civic domains, with an emphasis on informing education policy and practice. She has served on numerous committees and panels including the National Academies of Sciences, Engineering, and Medicine Committee on Developing Indicators of Education Equity, the steering committee for the CASEL Assessment Work Group, and the technical advisory committees for several state assessment programs. She is an associate editor of *Educational Researcher* and a member of the editorial boards for the *Journal of Research on Educational Effectiveness* and *Educational Evaluation and Policy Analysis*. In 2020 she received the Joseph A. Zins Award for Social and Emotional Learning Action Research. She holds a Ph.D. in educational psychology and an M.S. in statistics from Stanford University.

**Kadriye Ercikan** is Vice President of Research and Measurement Sciences at ETS and Professor Emerita at the University of British Columbia. She is responsible for ETS's foundational and applied research and psychometric support of ETS's major testing products and contracts. Her research focuses on validity and fairness issues and sociocultural context of assessment. Her recent research includes validation of score meaning using response processes, assessment of historical thinking, use of response process data for comparing groups and examining fairness and validity of interpretation and use of scores from artificial intelligence based automated scoring.

Ercikan is a Fellow of the International Academy of Education. Her research has resulted in six books, four special issues of refereed journals and over 100 publications. She was awarded the AERA Division D Significant Contributions to Educational Measurement and Research Methodology recognition for a co-edited volume, *Generalizing from Educational Research: Beyond Qualitative and Quantitative Polarization*, and received an Early Career Award from the University of British Columbia. Ercikan has been selected to serve as the NCME Book Series Editor (2021–2026).

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# Chapter 14

## Ambitious and Sustainable Post-pandemic Workplace Design for Teachers: A Portrait of the Arizona Teacher Workforce



**R. Lennon Audrain, Andrea E. Weinberg, Ashley Bennett, Joseph O'Reilly,  
and Carole G. Basile**

**Abstract** The professional lives of teachers are in an incredible upheaval as a result of the COVID-19 pandemic, which has potential implications for the teaching profession and the workforce. The ambiguity of what schools will look like in the future and growing disparities of children have teachers concerned that their jobs are more untenable than ever before. In this chapter, we examine the teaching workforce year into the pandemic. We focus specifically on Arizona and explore whether teachers stayed in the profession or exited during this time of uncertainty. Our analysis suggests that, to date, the pandemic has not had a significant impact on an already dire labor market in Arizona—classroom vacancies and teaching positions filled by under-qualified individuals were no higher in January 2021 than in January 2020. We conclude by arguing that, while focusing teacher recruitment may seem like a viable solution, it alone is insufficient. Rather, in a post-pandemic world, we must build new structures that increase teacher coordination and collaboration that leverage the expertise of all educators, ultimately leading to better working and workplace conditions. This critical examination begins to shed light on teaching, learning, and the preparation for both as we move to a post-pandemic future.

### 14.1 Introduction

The vital importance of quality teachers is indisputable. Much has been written about teacher shortage and the growing need for teachers not only in the United States but across the globe (Evans et al., 2019; UNESCO, 2016). For many years, all eyes have been on recruitment and retention, alternative pathways to teacher preparation, and a decrease in the rigors of teacher preparation. However, with the crisis of the pandemic also comes opportunity—opportunity to examine the working conditions of teachers, the teaching profession, and the learning environment in new ways. Vegas & Winthrop argue that we may be in a “leapfrog” moment (2020). At

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R. L. Audrain · A. E. Weinberg (✉) · A. Bennett · J. O'Reilly · C. G. Basile  
Arizona State University, Tempe, USA  
e-mail: [Andrea.Weinberg@asu.edu](mailto:Andrea.Weinberg@asu.edu)

Arizona State University, we envision the Next Education Workforce as our leapfrog. A workforce that can deepen and personalize learning for students by building teams, distributing expertise, increasing specializations, and creating more opportunities for advancement. It is a time to leapfrog, to take advantage of the upheaval to put the puzzle pieces back together in new ways, new shapes, and new formations. To begin, it is critical that we examine what is happening with the education workforce—understand the existing complexities of the teaching profession, acknowledge the chaos of the pandemic, examine what has happened to teachers over the past year—and think anew with urgency and creativity.

### ***14.1.1 Portrait of the Pre-pandemic Teacher Workforce***

Teachers play an influential role in society as well as in the lives of youth and caregivers. Unfortunately, the profession of teaching in the U.S. has faced some long-standing and menacing challenges that frequently serve to undermine its reputation. Considerations such as rigorous training and licensing, favorable working conditions related to demands and environments, substantial workplace agency, and relatively high compensation are defining characteristics of the status of a profession. Ingersoll and Collins (2018) note that while some individuals argue that “instill[ing] an ethos of public service and high standards” (p. 200) among teachers is sufficient to elevate the profession in the eyes of educators themselves as well as society, others maintain that a mere shift in sentiment is simply not enough. Rather, transformations of the characteristics that define the profession itself, including teachers’ organizational and working conditions, are essential (Ingersoll & Collins, 2018). Emerick et al. (2005) illustrate some of the current unfavorable working conditions teachers face when they write, “teachers often are isolated in their classrooms, face overwhelming noninstructional duties, have extremely limited opportunities for meaningful decision making, lack basic instructional materials, and perceive few opportunities for advancement and growth” (para. 3). These impact the reputation of the teaching profession in the eyes of society as well as from the perspectives of teachers, which has far reaching implications for teachers and students alike. One salient consequence is the nation-wide crisis in the U.S. with recruiting, training, and retaining individuals to the teaching workforce (Robinson, 2017).

Recruitment to the teaching profession has faced sharp decreases in recent years. Between 2010 and 2018, enrollment has declined by more than one-third (Partelow, 2019). Fewer than four percent of the 1.9 million high school graduates who took the ACT® in 2015 reported that they wanted to be an educator (e.g., teacher, counselor, or administrator) which is a drastic fall from seven percent of test takers who responded similarly in 2010 (ACT, 2016). Beyond expanding the number of individuals who pursue a degree in education, there is an imperative to attract and support a workforce that reflects the diversity of student demographics in the United States (Carver-Thomas, 2018). According to a recent report from the National Academies of Sciences, Engineering and Medicine, “there is growing and compelling evidence that



teacher-student racial match has important effects on student outcomes” (NASEM, 2019, p. 87). In 2015–16, twenty percent of the teaching workforce was teachers of color (Taie & Goldring, 2017). This percentage, however, is disproportionate to the total percentage of students of color in schools in the United States, which has increased to over fifty percent in recent years (NCES, 2016). Evidence suggests that new teachers entering education are increasingly teachers of color and decreasingly white teachers, which is promising (Warner-Griffin et al., 2016). As one end of the teacher labor market spectrum, our imperative to recruit and retain diverse teachers—teachers of color as well as those from other underrepresented groups (e.g., with disability, non-English first origin or primary language) that will make the workforce more representative of the student population—is evident.

Teaching is described as a complex practice (Ball & Forzani, 2009), with roles being multi-dimensional and unpredictable (Doyle, 1977). Some have described the work as “highly improvisational and wholly context dependent” (Ball & Forzani, 2009, p. 503). Thus, teaching can be extremely daunting for novice teachers, who are expected to support students to achieve the same outcomes as their expert counterparts. The pressure on teacher education is immense; it can either help to make the case for, or inhibit, teaching’s status as a profession. Teacher education is accountable to its teacher candidates, to students, and to the public (Cochran-Smith et al., 2018). Programs for teacher preparation must prepare its candidates for “work and life, academic learning, human development, and social justice” (Hansen, 2008, p. 12). Teacher education is tasked with equipping its candidates to enter one of the largest workforces in the country. Indeed, this highly skilled work of teaching is considerably “unnatural” (Jackson, 1986). That is, the work requires specialized and professional training, as Ball and Forzani (2009) argue; executing carefully designed learning experiences to groups of learners is not natural work. The complexity of teaching, and by extension, teacher education, cannot be tackled in siloed universities and schools. Rather, university-based teacher education programs must create hybrid spaces where “academic, school-based, and community-based knowledge come together in less hierarchical and haphazard ways to support teacher learning” (Zeichner et al., 2015, p. 124).

In the U.S., teacher certification criteria are determined at the state level, and it is up to states to define what they consider traditional and alternative certification programs. Generally, traditional teacher certification requirements include achieving a bachelor’s degree or higher and successfully completing a state-approved teacher preparation program that includes subject- or content-specific coursework, education coursework, a student teaching experience, and earning passing scores on licensure exams. Alternative certification programs, on the other hand, still require passing scores, but require fewer education-focused courses and shorter field experiences. University-based programs are more likely to include coursework and experiences that are associated with increased student achievement (Eduventures, 2001). While findings have been mixed, several robust studies found favorable outcomes for teachers who completed traditional teacher education programs and more positive outcomes for their students. Early career teachers who follow an alternative route to teaching feel more prepared to successfully meet the expectations of their

teaching roles (Kee, 2012; NCCTQPA, 2007); however, the students of alternatively certified teachers have lower achievement scores (Boyd et al., 2008; Clotfelter et al., 2010; Constantine et al., 2009; Darling-Hammond et al., 2005). Further, traditionally prepared teachers are more likely to stay in the profession longer than those who complete alternative programs (Boyd et al., 2008; Glass, 2008; Kane et al., 2006). One implication is that if teachers are better prepared for “usual” teaching, they are likely to more successfully handle stressors like the COVID-19 pandemic. Another implication is the need to recognize that individuals who enter the profession through these alternative routes would benefit from systems and structures (e.g., teaming) that offer scaffolds for these early-career teachers, who had narrower theoretical backgrounds and fewer experiences in classrooms prior to formally entering the profession.

Additionally, the contemporary teacher workforce faces challenges with retention. With an annual turnover rate of 16%, it is estimated that 8% of teachers leave the profession and 8% change schools every school year (Carver-Thomas & Darling-Hammond, 2017). If the 8% of teachers who leave the profession annually could be reduced by at least half, the national teacher shortage could be nearly eliminated (Sutcher et al., 2016). Teachers of color face turnover rates at a significantly higher rate (24%) than their white counterparts (Ingersoll & May, 2011). These challenges with retention can be largely attributed to factors related to working conditions, including the demands on and environment for teachers. Teachers consistently decide to leave the profession for similar reasons: lack of autonomy, pressures from testing accountability, large class sizes, lack of administrative support, dissatisfaction with teaching assignments, too few opportunities for advancement within the profession, and/or inadequate salaries (Adamson & Darling-Hammond, 2011; Boyd et al., 2005; Carver-Thomas & Darling-Hammond, 2017; Farinde et al., 2016).

The comprehensive environment for teaching and learning are also important elements of working conditions. The demands of teaching are only exacerbated by teachers operating in environments of structural isolation. Described as “egg-crates”, their instructional responsibilities are in one-teacher, one-classroom models (Lortie, 1975). Despite the potential benefits of positive collaborative relationships across the teacher’s career (e.g., Le Cornu, 2013), structural, administrative, relational, and conceptual barriers thwart teacher collaboration (Achinstein, 2002; Jao & McDougall, 2016; Johnson, 2003; Zimmerman, 2006). Efforts to encourage teacher collaboration have rarely attended to each of these aspects. Beyond removing structural and administrative barriers, teachers must learn to collaborate closely with other educators whose backgrounds and experiences may be unlike their own, leveraging the varied personal and professional experiences as assets to best meet the needs of students (Boveda & Weinberg, 2020; Weinberg & Boveda, 2021).

In addition to the environments of isolation, differentiation and advancement in one’s career is limited within the teaching profession. Historically, teaching has been an “unstaged occupation with few opportunities to access higher earning and higher status positions” (Natale et al., 2013, p. 5). Hierarchies within schools in the U.S. remain flat—meaning duties, roles, privileges, and supports are similar for all teachers, regardless of experience or aspiration to advance (Coggins, 2010). For

example, novice teachers are given the same teaching load as experienced teachers. Rigorous teacher education supports the development of teachers who are prepared to engage in the multifaceted work of teaching, the time constraints of initial teacher education and the broad scope of teaching practice that must be imparted through it (Ball & Forzani, 2009) can make accomplishing all the aforementioned activities difficult. While educator induction programs are required, there is tremendous variation in the quality, duration, and aims of such programs (Ronfeldt & McQueen, 2017), and only a small proportion of beginning teachers receive access to robust early career supports through these programs (Sutcher et al., 2016). While important, without shifting the demands of novice teachers, induction is a time-consuming obligation that is often not individualized to the specific needs of novice teachers and may serve to have counterproductive side effects that burden teachers, rather than offer them scaffolding to support the transition from teacher education to classroom teacher (Kelchtermans, 2019). Indeed, if early career teachers were to join an established and cohesive team of educators, their assets could be leveraged while they are simultaneously gaining professional support from more experienced teachers. For more experienced teachers who want to advance in the education profession, they find themselves with few options that allow them to maintain regular engagement in the work of teaching students. Instead, career advancement within the traditional educational systems is administrative or teacher-support roles that position individuals outside of classrooms. Teachers who want to advance, either for financial reasons or for a variation in their daily role and responsibilities, find few opportunities within current school structures.

The disparity between public school teacher wages and those of other college graduates exists across the U.S. and is greater in Arizona than in any other state (Allegretto & Mishel, 2016). Coupled with decades-long decreases in relative salaries (Allegretto & Mishel, 2016; NCES, 2019), and yearly increases in unreimbursed purchases by teachers to supplement their classroom budgets (García, 2019), it would be unsurprising to find teachers feeling compelled to leave the profession as a result of being unappreciated and unsupported.

The instability of teaching as a profession is a result of its workforce conditions and, by extension, the education workforce's design. In function and form, teaching was, pre-pandemic, untenable and will continue to be post-pandemic without dramatic shifts. Teachers are now even more isolated than ever, delicately balancing content delivery and caring for students' socio-emotional needs, facing top-down decision making, and transitioning to new instructional modalities with little support.

In this chapter, we outline some of the escalating expectations for teachers in the United States and paint a portrait of Arizona's education workforce as examples of a larger crisis with the education profession—a crisis that has left states, including Arizona, with dramatic shortages of qualified teachers in K-12 classrooms. Working conditions must change. Schools must find ways to increase collaboration among teachers, leveraging their varied knowledge, skills, backgrounds, and embodied experiences by structuring their work on teams. As students return to physical schooling, they need personalized learning experiences not only to address gaps in academic

instruction, but also to provide attention to their socio-emotional needs. In creating and implementing these carefully crafted learning experiences, collaborative teams of educators must have the autonomy to do what is best for students. The post-pandemic future is unclear, but one thing is certain: our systems cannot return to the way they were before.

### ***14.1.2 Escalating Expectations for Teachers: Pre-pandemic***

The complexities of teaching practice are coupled with working conditions replete with increasing curricular and pedagogical expectations, non-instructional demands, external pressures, and isolating working environments that contribute to the untenable nature of the job of teaching. These pervasive issues have existed for decades, but increasingly, teachers are asked to do more and for more students. While not exhaustive, the issues detailed below are some of the escalating expectations that teachers have faced for the last two decades since the inception of No Child Left Behind.

Pedagogical and curriculum requirements, providing students with a more holistic learning environment and experience, and accountability systems have been at the forefront of educators' escalating expectations in recent years. There have been tensions between the curricula and pedagogies—and the sheer number of individuals with the expert knowledge, skills, and dispositions required to deliver learning experiences—that address “new” standards which emphasize interdisciplinarity, inquiry, and open-ended problem solving (e.g., Common Core State Standards, Next Generation Science Standards). Recent increased attention to embracing diversity and adopting culturally responsive or sustaining pedagogies (Gay, 2002; Paris, 2012) is a favorable shift, as more educators have realized the importance of appreciating students varied experiences, languages, and cultures. By engaging students' experiences, languages, and cultures, educators effectively deepen learning experiences and connect complex academic experiences to their students' identities (Bitter & Loney, 2015). Deeper learning experiences facilitated through the enactment of asset-oriented pedagogies are good for all students. This, however, means that teachers must abandon long-standing—and perhaps deeply ingrained—pedagogies and practices that marginalize or even exclude students entirely, and replace these with those that affirm students' languages and cultures to engage *all* students in meaningful and relevant learning activities.

External control mechanisms under the guise of accountability (Ingersoll, 2009) are also important factors that influence teachers' perceptions of the expectations placed upon them and their working conditions—their demands and environments. The outcomes and measures used to assess quality teaching are often made outside of the control of the teaching profession (Evetts, 2009). While teachers themselves have little control over key decisions regarding curriculum and accountability, teachers have been vilified; they have been blamed for declines in student academic achievement, implicated as a threat the United States' economic competitiveness as students'

performance on international measures trails behind those in other countries, and even portrayed as culpable for innumerable perceived social and moral ills (Ingersoll, 2004). Standardized testing is one accountability mechanism, and teachers perceive these measures as having an array of negative impacts on their teaching as well as the profession. Not only are the tests seen to be misaligned with best practices for assessment, but they also contradict quality education practices, go against ongoing educational reform efforts, and impact teachers' pedagogical decisions in ways that limit meaningful student engagement in learning and confine curriculum decisions with the emphasis on "core" subject matter (e.g., Abrams et al., 2003; Aydeniz & Southerland, 2012; Sleeter, 2012). Further, many teachers believe the pressure to increase test scores encourages them to "teach to the middle" rather than differentiate across the full range of learners—increasing rigor for some and offering additional support for others—effectively promoting the status quo rather than rewarding teachers who strive to help all students achieve success (Aydeniz & Southerland, 2012). Since the widespread implementation of standardized testing in the U.S., teacher perception of their own autonomy has decreased (Warner-Griffin et al., 2018a, b). This is a troubling finding, since lower levels of autonomy are associated with lower commitments to teaching (Warner-Griffin et al., 2018a, b; Weiss, 1999) as well as higher rates of attrition (Guarino et al., 2006; Ingersoll & May, 2011). Heightened academic standards have come along with the increased accountability measures. As proficiency standards increased, many have objected, citing these as developmentally inappropriate (NAEYC, 2015). Teachers are left to operate in response to, rather than in collaboration with, the decisions of their district and school and administrators, who themselves are reacting to state and federal policy. Teachers perceive that emphasizing student outcomes on standardized tests limits teacher autonomy, stifles creativity, and restricts the curriculum to which students are exposed. Consequently, 25% of public-school teachers who left the profession reported that accountability systems, such as their school's assessments and accountability measures, were extremely or very important in their decision to leave (Podolsky et al., 2016).

The pervasive issues described above are just a few characteristics that contribute to the decreasing recruitment and increasing attrition rates of teachers. Like so many professions in the United States, working conditions have been transformed by the COVID-19 pandemic, and the cracks in the structure of the teaching profession—and the U.S. education system as a whole—have only been exacerbated. The purpose of this chapter is to identify the impacts the COVID-19 pandemic has had on the teaching workforce in Arizona.

### ***14.1.3 Escalating and Intensifying Professional Demands During the COVID-19 Pandemic***

The COVID-19 pandemic has had a dramatic impact on the professional lives of educators. Recent national studies found that the overwhelming majority of teachers

are working more than they did before the pandemic (77%) and enjoying teaching less (60%; Horace Mann, 2020). Teachers are concerned about workplace exposure to COVID-19 (Expect More Arizona, 2020), more so than those in other professions (Brenan, 2020). They feel insecure about their district's health and safety precautions (59%), believe annual leave benefits are insufficient to cover unplanned health-related absences (66%), and do not trust that their health insurance benefits are sufficient to adequately cover illness or other health issues (44%; Mann, 2020). Overall, many do not support in-person instruction during the pandemic because of the risk of exposure, with teachers of color even more reluctant to return to in-person instruction (Kurtz, 2020). Morale has declined dramatically; 85% of teachers report lower teacher morale in their school now as compared to before the pandemic began (Will, 2021)—with concerns for physical safety, emotional exhaustion, and pressure from added demands of teaching during times of extreme uncertainty.

The national Centers for Disease Control and Prevention (CDC) offers recommendations for mitigating the spread of COVID-19 as schools (re)open, including mask-wearing, physical distancing or barriers, enhanced classroom sanitation routines, ventilation system inspections and potential improvements, and operational routines and regulations for students, teachers, staff, administrators, and visitors (CDC, 2021). While some districts provide adequate personal protective equipment (i.e., masks for teachers and students, gloves, sanitation supplies, physical barriers), a lack of certainty about access to supplies left many teachers crowdsourcing from neighbors, friends, and families on social media. Beyond access to personal protective equipment, widespread concern exists about physical school facilities, including ventilation systems, space for physical distancing, and physical barriers. Given the increased risk of transmission in poorly ventilated indoor spaces, ventilation inspections in all school buildings are recommended prior to re-opening. Compliance with this recommendation has been inconsistent, with some regions inspecting all schools and making updates or accommodations to ensure air flow, and others rejecting or ignoring this recommendation entirely (e.g., Chicago Public Schools, n.d.; Irish, 2020). This inconsistent compliance with federal guidance around PPE and facilities that offer adequate ventilation invariably leaves teachers concerned that their schools might become sites for widespread COVID-19 transmission. While some CDC compliance measures are beyond the purview of teachers, measures for ensuring physical distancing are largely determined and enforced at the school level, with teachers creatively designing and constructing physical barriers, rearranging classrooms, and creating new routines to lower the risk of spreading and contracting COVID-19. The ingenuity and determination evidenced in the creative solutions teachers designed to safeguard children and themselves in classrooms is laudable, with many teachers using out-of-pocket funds for supplies to construct these classroom modifications. Since we know that better school facilities are associated with positive perceptions of working conditions (Buckley et al., 2005; Loeb et al., 2005), concerns related to physical conditions of schools and classrooms in the midst of a pandemic, where inadequate facilities and supplies put teachers and students at heightened risk, inevitably has a detrimental impact on teacher perceptions of their working conditions both during the pandemic and beyond.

In addition to safeguarding themselves and children within physical classroom environments, teachers are adjusting to new instructional modalities. Few districts in the U.S. have continued exclusively with in-person instruction for all learners. Most have adopted some combination of onsite, hybrid, or fully remote instruction, often shifting among these several times within a single semester—often with little to no notice—as community or school COVID metrics change. The uncertainty and ambiguity around instructional environments have been a source of stress for teachers. For some, this stress is exacerbated by technology challenges that existed for teachers and students alike, including access to devices that could be transported outside the school, reliable internet, or technology tools for remote learning (e.g., webcams; Weinberg et al., in preparation; Will, 2020). Whether teaching in person or remotely, or some combination of the two, *all* teachers are adapting to new instructional environments. Beyond sanitizing classrooms and navigating the maze of online learning systems, teachers are learning and adopting pedagogies for teaching online, implementing strategies to engage learners remotely, and working to build relationships with and among students as well as families and caregivers in this new modality (Hamilton et al., 2020).

Teachers are engaging in professional development either on their own or provided by their district to learn new technologies, adopt pedagogies for teaching online, and support students to become successful learners in new online and hybrid learning environments (Weinberg et al., in preparation; Wright et al., 2021). Of particular concern was the need for training to support students who were particularly vulnerable (e.g., those with disabilities or experiencing homelessness) as well as address mental health and wellbeing concerns that may be triggered or exacerbated by the pandemic (Hamilton et al., 2020). Effective pedagogical and learner engagement strategies used in classrooms do not translate directly to remote learning environments. For example, for most in remote classrooms, whole-group interactions are the norm and learners have limited opportunities to interact with—and learn from—one another. Teachers find themselves struggling to formatively assess students and provide meaningful and timely feedback, even though they find themselves spending more time on grading and giving feedback outside of class time than ever before (Weinberg et al., in preparation). In addition to learning new pedagogies, teachers in online environments must also guide students toward appropriate self-regulation, metacognition, and active learning strategies for this new environment (Broadbent & Poon, 2015; Peterson et al., 2018). Collaboration with families and caregivers is more important now than at any other time. Parents and caregivers play a heightened role in supporting the success of online and hybrid learning for K-12 students, taking on many roles previously assumed by instructional and support staff at school (Perry, 2020), and even some of the roles teachers play in a traditional classroom environment (e.g., establishing routines, managing stress, creating learning spaces). In fact, learners' attitudes and dispositions towards learning are more strongly influenced by supports they receive from families and caregivers than teachers (Organisation for Economic Co-operation and Development, 2020). Many learners, however, do not have an adult or older sibling to provide such support (Expect More Arizona, 2021; Weinberg et al., in preparation; Wright et al., 2021), leaving teachers to feel uncertain



and helpless, even as they are spending more time than ever working to engage and effectively communicate with families and caregivers. Expectations for caregiver involvement in the support of learning during the pandemic is a global phenomenon. In Norway, for example, many parents shared that they spent a significant amount of time following-up on their children's schoolwork (Blikstad-Balas et al., 2021).

These additional demands on teachers are occurring simultaneously with professional isolation, leaving teachers to navigate this shifting professional terrain with few, if any, opportunities to build on the collective expertise of other educators. This lack of collaboration, coupled with policies that restrict or prohibit community volunteers from school sites and virtual classrooms (e.g., CDC, 2021; TESD, 2021), the reduction of intervention services, and the reduction of paraprofessionals (Burnette, 2020) teachers are navigating this unprecedented terrain without the synergy that comes from professional support and collaboration (Ritchie, 2012).

Beyond the physical concerns and the challenges of adapting to new and sometimes frequently changing instructional modalities, public sentiment toward educators has shifted dramatically. The reputation of the teaching profession has been fraught for decades, with teaching often depicted as a low-demand occupation that is well-suited for individuals seeking to comfortably balance work and family life (Bartlett, 2004). The combination of low pay, low status, and job security that comes with tenure contributes to the devaluation of teachers, reinforcing the erroneous idea that those who teach do so because of a lack of other options (Bartlett, 2004). This devaluation of teachers appeared to abate early in the pandemic. Initially, as students were sent home to learn in Spring 2020, there was widespread support and appreciation for teachers and the roles they play in the lives of children and caregivers alike. As summer progressed and the Fall 2020 semester began, some of these narratives shifted. Presumably, some of this can be attributed to the increasing politicization of COVID-19 in the U.S., the equivocal evidence around the risk of transmission in schools (Viner et al., 2020, 2021) and public health benefit of school closures (Silverman et al., 2020), as well as the broader academic, social, public health, and economic impacts of school closures (Kneale et al., 2020; Viner, 2021). Some districts were forced to cancel reopening plans when teachers refused to return to in-person instruction early on. As districts across the U.S. continued with plans for in-person instruction despite rises in coronavirus cases, teachers staged sick-outs and strikes in protest (e.g., Arizona, California, Idaho, Louisiana, Massachusetts, Texas). Teachers and classrooms were maligned for their reluctance or refusal to return, even accused of not caring about students or their education (e.g., Nocero, 2020). The embattled and uncertain process of returning to school has exacerbated long standing concerns that confront teachers individually and collectively.

Amid this shifting professional terrain for teachers, perceptions of reduced power and professional agency are pervasive (Weinberg et al., in preparation). Narratives of "learning loss" and "learning inequalities" dominate the news as teachers are following district and school mandates that educators often believe are misaligned with the developmental and academic needs of children, and potentially detrimental to their growth and wellbeing. For example, to meet minimum contact time with



students, many are required to replicate an in-person school day in an online environment by spending the entire school day on-screen. Further, grading systems (e.g., report cards) and large-scale assessments have often remained unchanged, even when many districts have adopted flexible attendance policies (Dusseault & Makjori, 2021). As students continue to be measured on learning gains and losses using pre-pandemic measures and metrics, teachers are keenly aware that their own evaluations are contingent on student performance, as is school and district funding, and, in some cases, the lives and futures of students (e.g., ACT, AP, graduation requirements). While this push to continue the testing mandate at this time has been called “an attack on public schools, teachers, and students” (Sanser, 2020, para. 9), to “ease up” or deviate from mandated standards would be to disregard the potential implications for teachers themselves, their schools, and students. As the narrative of learning loss and continued standardized testing exert pressure to focus on academics, teachers’ concerns extend beyond the academic success of their remote and onsite learners, to include mental health and wellbeing of their students (Weinberg et al., in preparation) and other factors that contribute to inequities for students. Teachers are well aware of the implications for students when parents and caregivers are working or otherwise not able to provide support, for students without access to internet or devices, and a litany of other variables impacting the lives of students during the pandemic (Expect More Arizona, 2021; Weinberg et al., in preparation). Greater autonomy and input in school decisions are factors associated with more positive working conditions (Guarino, Santibañez, & Daley, 2006; Ingersoll, 2001; Ingersoll & May, 2011). This widespread sentiment that professional agency has been even further reduced might be considered one of the greatest threats to the professional wellbeing of teachers.

Each of these factors contributes to a looming concern: in our pre-pandemic content, widespread teacher burnout has already led to a crisis-level shortage of teachers. The COVID-19 pandemic has accelerated this workforce crisis that is likely to persist for many years to come. Safety concerns due to COVID-19 have prompted teachers to consider leaving the profession (Flannery, 2020). While this is troubling, what is even more concerning are the working conditions—expectations that teachers respond to ever-increasing demands without equitable compensation. If this continues, as scholar shea martin quipped “[we’re] going to lose an entire generation of not only students but also teachers.” For states like Arizona, where teacher shortages have been at crisis levels for years, this could be catastrophic for students, teachers, public school systems and teacher education programs alike.

Organizational pressure has the potential to inspire innovation and productive risk-taking (Richardson, 2002), but this potential is limited without environments that promote agency and emphasize collegial support that promotes self-confidence (Peltonen, 2015). Teachers need to be supported to work closely with one another, to leverage strengths and resources of other educators (Kraft et al., 2015). In addition, they need sufficient access to the array of services and programs that could be provided by other professionals within a comprehensive holistic educational system (e.g., social workers, psychologists, school counselors, nurses). Positive relationships among teachers and robust support systems are associated with heightened morale and improved working conditions (Borman & Dowling, 2008; Ladd, 2011;

Kraft et al., 2018) If these were in place prior to the pandemic, teachers would still face challenges, but would not be saddled with the increased workload and stress that comes from working in isolation and without adequate material or relational resources.

#### ***14.1.4 Compounding Factors: Personal, Structural, and Social Considerations***

The professional unpredictability and isolation, learning of new pedagogies and strategies to engage learners in new instructional environments, and concerns for health and wellbeing are occurring simultaneously with personal life circumstances and experiences that put educators at increased risk for burnout (Bassok et al., 2020). Teachers are finding fewer outlets for their stress and anxiety, giving up self-care routines, and suffering physical and mental health consequences (Aperribai et al., 2020). Further, personal relationships have been altered dramatically, with some living in physical (and often social) isolation, avoiding direct contact with others including friends and family. Conversely, many find themselves in the opposite scenario, with individuals (e.g., parents or caregivers and children) together most or all of the time. While this is the common experience for most across the United States, there are some factors that are unique to or more commonly experienced by teachers.

Teaching is a profession primarily comprised of women. In the United States, most teachers are women (76%), and women make up an even larger proportion of teachers in elementary grades (89%; Taie & Goldring, 2020). Women, more often than their male counterparts, take on uncompensated household and caregiving roles, and this has been exacerbated by the COVID-19 pandemic. Women are two-thirds more likely to serve as primary caregivers for family members (NAC, 2009), and are more likely to have both formal and informal caregiving roles, (Langer et al., 2015). Further, eighty percent of single-parent households are headed by women. Caregivers are placed at an increased risk of exposure, increasing the chance that they will need to take leave time if they become ill. Relatedly, close contact with colleagues and students in schools introduces concerns for these primary caregivers, as this contact increases the vulnerability of their own families and others, they may care for to COVID-19.

One implication of the low salary for teachers is that many take on a second or third job to make ends meet; estimates are that nearly 60% of teachers have jobs outside of their teaching role (García & Weiss, 2019). While many found themselves stretched thin while managing multiple jobs and personal lives prior to the pandemic, the circumstances amid the pandemic make juggling multiple jobs even more daunting. Some are finding this so challenging to manage that they are risking their financial stability by quitting their additional jobs (Weinberg et al., in preparation). In addition, as businesses and services have closed or reduced operations, other teachers have

lost their additional incomes. As structural inequities have been laid bare during the pandemic, many of these intensify inequities for teachers and students alike. For example, for teachers and their students, an uneven technological infrastructure means many lack high-speed broadband coverage (Pew, 2019), and fewer devices in homes. These COVID-19 related increases in financial pressure and personal responsibilities exacerbate the stress and anxiety caused by uncertain and expanding professional responsibilities required of teachers during the pandemic.

### ***14.1.5 Arizona Context***

Arizona faces unique challenges in its teacher workforce. Arizona teachers are more likely than those in 48 other states to express their willingness to leave the profession. Nearly half (47%) of Arizona teachers surveyed recently said that they would leave the profession “as soon as possible” if offered a higher paying job compared to the 35% national average (NCES, 2017). Compensation, therefore, is a contended working condition for Arizona teachers. While there are dramatic differences in adjusted salaries from state to state (NCES, 2019), this alone does not account for the discrepancy among teachers from various states when asked if they would leave for a higher paying job. Underscoring this, in recent years there has been significant first- and second-year teacher turnover. For example, in 2013–14, “24% of first year teachers and 20% of second year teachers left their positions and were not reported as teaching in Arizona” (Arizona Department of Education [ADE], 2015).

Additionally, AZ has more pathways to licensure than most states, and most of these pathways have their own certification. For the purposes of this study, “typical” certifications refer to those individuals who complete a comprehensive teacher education program that involves both extensive coursework as well as mentored field experiences. These are generally university-based programs. In addition, “atypical” certifications are held by teachers who entered the teaching profession through a different route or pathway. Teachers may be, for example, licensed with an alternative/teaching intern certification, an emergency substitute certification, emergency teaching certification, international teaching certification, or substitute certification. An alternative/teaching intern certification is designed to enable individuals to enter into a teaching contract while simultaneously completing the requirements for an Arizona Standard Professional teaching certificate (Arizona Department of Education, 2018a, b). Ideally, the teaching intern certificates expire and, by the time it does, the holder will be eligible to apply for a professional certificate. That is, the certificate holder must be enrolled in an Arizona State Board approved alternative path to certification or teacher preparation program while they are under contract. At minimum, the holder must have a fingerprint clearance card, a bachelor’s degree, a verification letter from their Arizona State Board approved program and have passed their subject area’s subject knowledge exam requirement. An alternative/teaching intern certification may only be used in the district requesting the individual to have this

certification and is valid for a finite period of time since teachers holding this certificate will apply for a professional certificate upon completion of their certification or preparation program.

The traditional substitute certificate requires an individual to have at minimum, a bachelor's degree and fingerprint clearance card (ADE, 2017b). The substitute certificate is valid for 6 years and is renewable. An emergency substitute certification, on the other hand, is only valid for one school year and entitles the holder to only teach in the district that verifies an emergency employment situation. Unlike the traditional substitute certificate, the emergency substitute certificate only requires the holder to have an associate's degree and high school diploma. Holders of both the traditional and the emergency substitute certifications are not eligible to be assigned a contracted teaching position and are limited to 120 of substitute teaching per school year (ADE, 2017a).

Emergency teaching certificates are issued when there is an emergency employment situation, and a request is made by the district or charter superintendent. The emergency teaching certificate holder may enter into a teaching contract, but only in the district requesting the certificate. This certificate is issued for early childhood, elementary, and secondary teaching certificates and their required endorsements. As of August 2017, however, emergency teaching certificates ceased to be issued for special education. The emergency teaching certificate can only be issued three times to an individual, and those who were on an alternative/teaching intern certification are ineligible for an emergency teaching certificate. (ADE, 2017c). Requirements for this certificate are more stringent than other emergency certificates for both the holder and district or charter school. The teacher must have a bachelor's degree, have passed the exam requirements, and have a fingerprint clearance card. In addition to the superintendent verifying that an emergency employment situation exists, the position must have been advertised on a statewide basis and with, at minimum, three career placement offices at higher education institutions. Additionally, the district or charter school must be participating in an Arizona State Board approved alternative path to certification program, or if the superintendent can evidence that the program is not available or not capable of alleviating the emergency situation.

The international teaching certificate "is issued to teachers from foreign countries who are contracted through the foreign teacher program as authorized by federal statutes enacted by the Congress of the United States or other foreign teacher recruitment programs approved by the United States Department of State or the United States Citizenship and Immigration Services and who are working under a J-1 or Q-1 visa" (ADE, 2018b). The holder's certificate is valid for the length of their J-1 or Q-1 visa and may be extended, though it is limited to 12 years. The holder must have a fingerprint clearance card and a verification form from an ADE-approved Foreign Credential Evaluation Agency that the holder has, at minimum, a bachelor's degree and completed a teacher preparation program, both comparable to those in the United States. Lastly, holders need a letter signed by an Arizona school personnel director or superintendent that the individual is in a contracted teaching position through a foreign teacher program.

### ***14.1.6 Arizona COVID-19 Policy Timeline and Guidance***

Unlike other countries and most other states in the U.S, Arizona is a local control state, meaning that public school governance and management is given to the elected representatives on the school board, who make pertinent decisions about operations as opposed to the state and federal government (“Local Control,” 2016). Local control is similar to Finland’s “decentralized” schooling system, which can be seen as both a challenge and an asset. While decentralization has made state-wide, uniform decision making about COVID-19 response difficult, it has also allowed flexibility in local decision making, ceding autonomy to local areas’ and cities’ contexts (Lavonen, 2021). While Arizona and Finland may share similar decentralized systems of education, in Arizona, decentralization and local autonomy has meant that some districts are more equipped than others to take on the challenges they face.

Further, Arizona’s K-12 school systems are fractured across schools and districts, as districts may be K-8, 9–12, or K-12. As a result, when 8th grade students leave their K-8 district, they matriculate to many different 9–12 districts. In addition to this fractured articulation, Arizona currently has some of the most extensive school choice options, where students and families may elect to attend schools outside those assigned by the location of their family residence. This includes other public schools within and outside their home district as well as online or charter schools. In 2020, public charter schools made up 28% of the state’s total schools in 2020, with 20% of Arizona public school students attending a charter school (ACSA, 2020). Local control has left decision making regarding COVID-19 up to each district, and some major decisions have even been left to the school level (e.g., learning management systems). Due to Arizona’s unique school governance structure, this chapter cannot fully represent the alternative means of education, reprioritization of curriculum, or attendance found in all schools. We can, however, discuss the overarching policy responses from state agencies, such as the Governor’s office, Arizona Department of Health Services (ADHS), and ADE and provide anecdotal responses from district leaders about their decisions.

On March 13th, 2020, Doug Ducey, Governor of Arizona, made a statement after the presidential declaration of a national emergency related to the nascent COVID-19 pandemic. March 15th marked the day that the Governor and the Superintendent of Public Instruction, Kathy Hoffman, announced an initial two-week closure of Arizona schools. During this initial closure, the primary focus swiftly shifted to a focus on physical wellbeing and safety of students rather than instruction. The main concern, addressed in a March 16th update, focused on long-term scenarios for school closures and solutions to looming uncertainty, such as access to food. On March 20th, the Governor and Superintendent declared another two-week extension of school closures. Arizona State Representative Michelle Udall crafted House Bill 2910 releasing public schools from the requirement to make up the missed instructional hours due to statewide closures, canceling the statewide assessment, and reaffirming that all school employees—including hourly employees—would continue to be paid during the closures (Office of the Governor of Doug Ducey, 2020). The state

house and senate unanimously supported the bill, and Governor Ducey signed the legislation on March 27th. The initial responses to the pandemic were addressed as temporary. On March 30th, however, Governor Ducey and Superintendent Hoffman announced school closures through the end of the school year.

Uncertainty about school modalities of instruction loomed throughout the summer. In an Executive Order signed by Governor Ducey on June 29th, the physical reopening of schools was delayed until August 17, 2020, but schools could choose to conduct distance learning before then. On July 24th, the Governor and Superintendent released the “Arizona: Open for Learning” plan, investing a total of \$440 million federal dollars into public schools while also commissioning local school leaders to make decisions about their COVID-19 response plans. By August 6th, a \$7.5 million partnership between the Governor’s office, the Arizona Department of Education, Helios Education Foundation, and Arizona State University was launched to help K-12 teachers deliver quality instruction in online and blended learning environments. That same day, the Arizona Department of Health Services and Arizona Department of Education released benchmarks to help guide local decision making for public school districts and charter schools about when to offer fully virtual, hybrid, or in-person instruction amidst the ongoing pandemic.

The beginning of the school year would be met with many public-school districts engaging in patchwork policy making and implementation. This was exacerbated by the aforementioned fragmented nature of Arizona school district structure. For example, some schools who began their school year online had cohorts of freshmen from multiple schools and districts. This fragmentation was only compounded by the increasing politicization of the pandemic and the precautionary measures, such as mask-wearing. On November 19th, 2020, Dr. Cara Christ, the Director of ADHS, issued an emergency order mandating that all students, faculty, staff, contractors, and visitors in public district and charter schools must wear a mask on school campuses, buses, and during school-related activities., Governor Ducey also announced the additional distribution of \$370 million in Coronavirus Aid, Relief, and Economic Security (CARES) Act funds to schools. The investment of federal dollars is similar to Spain, where national funding supported local education communities’ direction, implementation, and enhancements necessitated by the COVID-19 pandemic (Valle & de Olagüe-Smithson, 2021). The funds were released at the beginning of the 2020–21 Spanish school year, September 2020. A marked difference for Arizona and other states in the U.S. is the timing of the receipt of the funds, which were not received until months into the 2020–21 school year.

Tensions between the Governor’s Office and the Superintendent of Public Instruction became evident at the beginning of 2021. State Superintendent Hoffman called for Governor Ducey to order all schools to conduct distance learning for two weeks after the winter break for schools so families could quarantine to stop the spread of COVID-19. C.J. Karamargin, a spokesperson for Governor Ducey’s office, said that the governor would not consider the request, reiterating that mode of learning would be left up to individual school districts. Just a few days after this exchange, Governor Ducey delivered his annual State of the State Address on January 11th, 2021, in which he said “we will not be funding empty seats or allowing schools to remain in

a perpetual state of closure. Children still need to learn, even in a pandemic.” While unclear about the fiscal implications, educators and education advocates interpreted the governor’s comment that districts must “return to full-time in-person school or lose funding” as a threat.

## 14.2 Findings

Local Education Agencies (LEAs) are asked to report site-level data at the beginning of each school year to the Arizona Department of Education’s (ADE) Teacher Input Application (TIA), annually, including information on teachers, teaching positions, administrative positions, and certification status (ADE, n.d.). In addition, teacher and principal evaluation performance data is reported through this application. It is only recommended that LEA’s input their information, but Title I schools and charter schools must enter their information. They are required to keep the data updated throughout the school year by editing the application as changes occur. Unfilled positions are not updated in the Teacher Input Application.

For this study, we examined year-over-year (YOY) comparisons from 2017 to January 2021. While a majority of the data were from comparisons between January 2020 and January 2021, 2017–2019 end of year snapshots were included to see if any YOY changes were actually part of an existing trend. Overall, the number of teachers reported to ADE’s Teacher Input Application has remained steady during the school year (SY) 2019–20 to SY 2020–21 period—around 58,000 teachers were reported in January 2020 and around 59,000 teachers were reported in January 2021. The total number of LEAs and schools reporting have increased, so small variations can possibly be attributed to the slight differences in year-to-year reporting. Overall, reporting quality at the LEA and site-level has been typically high, around 96%.

The average Arizona teacher has around 11 years of experience and is 43 years old. The number of novice teachers—those with no experience—currently working as of January 2021 has remained steady from January 2020. A majority (76%) of teachers are female, and the largest ethnic groups of teachers in Arizona are white (75%) and Hispanic (16%). Both gender and ethnic groups have remained steady, though the American Indian/Native Alaskan teacher population saw a 6% decrease. Arizona has seen a decrease in educators teaching Native American Language/Culture (14%), Bilingual/Structured English Immersion (13%), and Reading Intervention (3%). Given the recent increased acknowledgement of the systemic erasure of Native American and other cultures, the decline (albeit slight) in American Indian/Native Alaskan teachers and those certified to teach Native American Language and Culture is notable. This is of particular relevance as teachers personalize learning for students, employing culturally sustaining and/or culturally relevant pedagogies. It is essential to have teachers knowledgeable about diverse cultures and backgrounds, and to leverage the expertise of teachers around them. Similarly, although a relatively small decrease (3%), reading intervention is going to be a critical need next school year, as the inequitable experiences among students will become more evident the longer

some students are learning remotely or in conditions that are heavily impacted by the pandemic.

The teacher populations have remained steady in terms of their location characteristics, or what country they are in, and whether they are in urban—including suburban—or rural schools. While there has been a slight population shift at the county level between SY 2019–20 and SY 2020–21, the population has remained steady. The shifts have been minimal for schools that are labeled urban or rural.

There have been significant increases in charter schoolteachers from 8,600 in SY 2019–20 to 9,800 in SY 2020–21, a 14% increase. In addition, there were significant increases in online teachers from 800 in SY 2019–20 to 1900 in SY 2020–21, a 136% increase. Face-to-face public school teacher populations have remained steady, including the teacher populations at Title 1 eligible/ineligible schools. Schools were receiving funding for prior year counts, so changes may be seen in the future. It is worth noting that in the context of the COVID-19 pandemic, many of these teachers in face-to-face schools are now remote.

Our study found that there was a 52% (approximately 900–1,400) increase in emergency teaching certificates from SY 2019–20 to SY 2020–21. While on first glance this seems on par with predictions about COVID-19's impact on the teacher shortage, this number actually reflects the pandemic's impact on licensure. ADE granted around 600 educator preparation program completers, who were not able to register for their licensure exams, emergency teaching certificates in lieu of their full, typical certification. We separated the EPP completers on emergency teaching certificates from true emergency teaching certificates (~800) which is a decrease from this point in time last year.

Individuals with emergency teaching certificates are more concentrated in Yuma County (15%) versus the overall teaching population (3%), in Title I schools (83% vs. 62% overall), and in elementary grades (76% vs. 65% overall) during SY 2019–20 to SY 2020–21. They average two years of teaching experience versus the overall average of 11, and the age range is skewed toward the younger population with over 50% of the holders being between 18 and 29 and the average age being 33. More Hispanic and Black teachers have emergency teaching certificates than typical certificates (29% vs. 16% overall for Hispanic teachers; 7% vs. 4% overall for Black teachers). Less white teachers, however, have emergency teaching certificates than typical certificates (56% vs. 76% overall).

For individuals not certified—or those in teaching positions without any valid certificates—there was an 17% increase (approximately 3,200–3,700) from SY 2019–20 to SY 2020–21. These individuals are more concentrated in Maricopa County, the state's most populous county where 66% of the Arizona teacher population works. Seventy-six percent of the non-certified teachers in Arizona work in Maricopa County, more concentrated in its urban areas, charter schools, and in schools that are Title I ineligible schools. Further, teachers on emergency certificates are much more inexperienced. Like the emergency teaching certificates, the age range is skewed toward the younger population. More Black and Asian teachers are teaching without certification. Notably, the proportion of male teachers teaching while not certified is also higher (31% vs. 24% overall).



The Arizona School Personnel Administrators Association (ASPAA) is an organization that targets and represents human resource professionals and school personnel in Arizona. Early in the SY 2020–21, the ASPAA administered a survey and over 200 public school districts and charter schools responded (ASPAA, 2021). Per their survey, as of December 2020, there were about 7,485 teacher openings that needed to be filled for SY 2020–21. Of those, 1,988 were teacher vacancies, meaning the positions were filled by having teachers work on 6/5ths contract, meaning that they have no planning time (40%), long-term substitutes (30%), contracted agencies (18%), administration or certified specialists (e.g., instructional coaches) (3%), collapsing where existing teacher(s) have a class size that exceeds the school's class size limits (3%), vacancies, classified personnel (e.g., paraprofessionals) (3%), and collapsing in which the school created multi-grade classrooms (2%). Additionally, of the 7,485 teacher openings, around 3,482 were filled by individuals not meeting standard teacher requirements. These positions were filled by individuals who received an emergency teacher or substitute certificate (32%), those who were pending certification (23%), those who received a teacher intern certificate (18%), subject matter experts (13%) or those whose certificate is based solely on their degree content area and not the completion of a teacher preparation program, those hired from outside of the United States (11%), or those who were a pre-service (not graduated) student teacher who assumed full responsibility as “teacher of record” of a classroom (6%).

Finally, the remaining 1,360 teacher openings were comprised of educators severing employment as of December 2020. Of these teachers, 79% resigned and, regardless of reason, their school or district approved their “release of contract”; 12% of these teachers did not report to work at the start of the school year; and 10% abandoned their position. Of the teachers who severed employment, 37% cited COVID-19 as their primary reason.

The data show, however, that the trend of overall teacher openings in Arizona has remained steady over the past three years. As of December 2019, there were around 7,570 teacher openings, and as of December 2018, there were around 7,453 teacher openings (ASPAA, 2021). These teacher opening trends demonstrate instability in Arizona's teacher labor market. The teacher labor market's instability is a problem of the conditions embedded in the education workforce's design. Rather, the full professionalization of the teaching profession can only be accomplished through transformations of the characteristics that define the profession itself, including teachers' organizational and working conditions (Ingersoll & Collins, 2018).

### 14.3 Conclusion

In Arizona, we have, so far, been lucky; the numbers related to issues brought up in this article have not significantly changed as a result of the pandemic. Arizona already faces a significant challenge in staffing its schools with qualified individuals. Many predicted COVID-19 would force more people out of the profession than usual. Some believed that this would be seen in increased retirements and resignations at the

end of the 2020 school year. And others predicted teachers would leave classrooms after the tumultuous school 2020–21 year commenced. Time will tell. Recent surveys (e.g., Brenan, 2020) and anecdotal evidence suggest that an astounding number of teachers are considering leaving the profession. When teachers and students return to the classroom for the next normal, much will be unrecognizable. Learners will have changed significantly—mentally, physically, and emotionally—as will have teachers. Many students will have lost a year or more of learning and teachers will need to meet them where they are. In a one-teacher, one-classroom model, where teachers are expected to know and be able to do everything, it was difficult pre-pandemic and after—impossible. The numbers weren't great to begin with—a dire circumstance of thousands of teachers leaving, more alternative certification and novice teachers coming in trying to learn a complex profession in isolation. If the pandemic has taught us anything, it is that isolation has outsized negative consequences.

While some might believe the obvious answer is to find more people to teach, we disagree wholeheartedly. Although recruitment to the teaching profession has faced sharp decreases in recent years, it is woefully insufficient to focus exclusively, or even predominantly, on recruitment efforts. Experts in content can teach, but this is not enough—thousands leave every year, and this research spotlights that issue of retention. Instead, we should be making large-scale systemic transformations to the characteristics that define the profession itself, including teachers' organizational and working conditions to increase both agency and collaboration. This includes restructuring the traditional hierarchy of the U.S. public school system to include roles for individuals with different levels of skill, focusing on factors that have been identified as relevant to improving the working conditions for teachers (e.g., material resources, class sizes, physical structures, and occupational health and safety concerns; Emerick et al., 2005).

Profound changes to the status quo are essential to address the challenges teachers face and ensure the teacher workforce does not continue to decline. Plans for a more holistic and comprehensive view on teachers and their needs, as well as those of students, are imperative as schools prepare for full reopening. This should include wellbeing supports for teachers (Green & Bettini, 2020) as well as explicit attention to rebuilding school communities to support healthier working conditions to reduce isolation and expand their support networks. Prior to the pandemic, teachers felt insufficiently prepared to identify and respond to the mental health needs of students (Reinke et al., 2011). The pandemic not only magnified teachers' and students' needs, but it also showed that successfully leveraging the expertise of all educators will be critical. Hence, there is a need to reconsider how educators work together to meet the holistic needs of students. New kinds of learning environments will need to be created, teachers will need to learn to work in teams, distributing expertise. The novice or even the teacher candidate who comes into a classroom will need the support of a team in real time, not before or after school. Teachers will need to examine data and consider how they group their students to personalize learning. We will need community members who are trained in the instructional skills and brought in to help and support professional teachers and novices. Paraprofessionals and instructional aides will need additional specialized training in order to strategically support classroom

learning. We need to lean into technology that can help personalize and provide foundational skill building. Professional teachers will need time for planning for deepening learning, applied knowledge, and personalization. Additionally, schools and districts may consider creating new positions in their schools that allow some teachers to assume “hybrid” roles. This could include part-time classroom teaching and part-time leading, mentoring, or action research (Berry et al., 2011).

These ambitious shifts are achievable. Collaboration will be key, and new roles such as team leaders will be crucial. Having thousands of unfilled positions in December of each year is a huge red flag that the education workforce is not stable and is unsustainable the way it is. In addition to more robustly funding PK-12 education to enable compensation increases for teachers, systems and structures in schools much change. This is the lull before the storm if we do not start doing something to prepare teachers now for new organizational structures and for new ways of implementing what we know is quality teaching and learning. We need to stop thinking about teacher shortage as a retention and recruitment problem and start thinking about transforming the teaching profession itself.

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**R. Lennon Audrain** is a doctoral student in educational policy and evaluation at the Mary Lou Fulton Teachers College at Arizona State University. A former Latin and Spanish teacher in both Arizona and Massachusetts, his research interests explore how pre-collegiate, grow-your-own teacher programs can be mechanisms for teacher recruitment and teacher education and how these programs can be enhanced with educational technology. He holds a Master's degree in technology, innovation, and education from the Harvard Graduate School of Education and a second Master's degree in curriculum and instruction from Arizona State University.

**Andrea E. Weinberg** is an Assistant Professor of Teacher Education in Mary Lou Fulton Teachers College in the division of teacher preparation. Affiliated Faculty in the Institute for Social Science Research, and a Senior Scholar with the Global Institute of Sustainability and Innovation at Arizona State University. Her scholarship, teaching, and service are grounded in her commitment to supporting teachers to not only excel and persevere in the profession, but become fervent advocates for the profession of teaching. Her research on transdisciplinary teaching and learning for science and sustainability education includes collaboration and collective engagement in K-12 and teacher education. Using participatory and interdisciplinary approaches, Dr. Weinberg works alongside undergraduate students, teachers, and elementary students to create and study action-focused projects centered on community-driven challenges including urban biodiversity loss, food waste, and equitable access to nutritious and culturally relevant foods in schools and in the community.

**Ashley Bennett** is a research analyst within Mary Lou Fulton Teachers College and the Arizona Department of Education. She has served the roles of teacher, education program specialist, and data analyst in the education field for the past 14 years. Her work and research interests focus on the interdisciplinary connections between data science, health, environment justice, and education; data architecture and information systems that improve analytic capability for research and policy decisions; and supportive, equitable educational environments for both teachers and students. She is currently pursuing a Master's degree in Biological Data Science.

**Joe O'Reilly**, Ph.D. is the Director of the ASU Helios Decision Center for Educational Excellence. His work focuses on making data useable by practitioners and policymakers in order to improve student outcomes. Prior to Arizona State, he served as the Director of Research in a large school district. He is past Vice-president of AERA, Division H: Research, Evaluation and Assessment in Schools.

**Carole G. Basile** is the Dean of the Mary Lou Fulton Teachers College at Arizona State University (ASU). As Dean at ASU, her work has centered on redesigning the education workforce and changing practices in teacher and leadership preparation. She is currently working with education organizations nationally and internationally to design systems and enable organizational change in these areas. She is recognized for her work in math and science education, teacher education, community engagement, and environmental education. Dr. Basile has also has 15 years of business experience in the areas of sales, management, and corporate training and human capital development.

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# Chapter 15

## Education in the Time of COVID-19 in France, Ireland, the United Kingdom and the United States: the Nature and Impact of Remote Learning



William Thorn and Stéphan Vincent-Lancrin

**Abstract** This chapter reviews the evidence of the impact on children's education from the school closures, implemented over the period March-June 2020, as part of the lockdown measures put in place to control the spread of the Covid-19 virus. The sources of information are surveys of the adult population, parents/guardians of school-age children, teachers and students based on representative samples as well as achievement tests that were accessible by early 2021. The lockdowns and associated closures of schools implemented in response to the arrival of the Covid-19 pandemic represented a sudden and unprecedented event for which school authorities, teachers, parents, and students were unprepared. While distance and remote education arrangements were put in place at short notice, they represented an imperfect substitute to in-person schooling. In the short-term, the consequences of school closures and lockdowns appear to have been modest in scale and impact in the reviewed countries. For most (though by no means for all) children, missing 8–18 weeks of face-to-face schooling appears not to have had dramatic consequences for either their academic or broader development, or led to the significant widening of pre-existing inequalities. However, a definitive assessment of the impact of the school closures in the first half of 2020 will not be possible for some time.

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W. Thorn (✉) · S. Vincent-Lancrin (✉)  
Directorate for Education and Skills, 2 rue André-Pascal, 75016 Paris, France  
e-mail: [william.thorn@oecd.org](mailto:william.thorn@oecd.org)

S. Vincent-Lancrin  
e-mail: [stephan.vincent-lancrin@oecd.org](mailto:stephan.vincent-lancrin@oecd.org)

## 15.1 Introduction

The objective of this chapter is to offer some insight into the impact on children's education from the school closures, implemented over the period March–June 2020, as part of the lockdown measures put in place to control the spread of the Covid-19 virus. The sources of information are surveys of the adult population, parents/guardians of school-age children, teachers, and students, as well as achievement tests that were accessible by early 2021. The information was collected during the period of lockdown or close thereafter. The focus is on evidence from surveys and studies based on representative probability samples—that is, from surveys collecting information from samples designed to be representative of clearly defined target populations. The exception is the discussion of the results of academic achievement tests. The corpus of studies meeting this condition is surprisingly small, even in high-income countries. Consequently, most of the information comes from five countries: France, Ireland, England, and the United Kingdom (UK), and the United States (US) (see Annex A for details). Depending on the topics, the picture is supplemented by information from Australia, Belgium (Flanders), Italy, and the Netherlands. The picture that is drawn is inevitably partial, not only geographically, but also thematically as the studies from which information has been drawn were developed or adapted very quickly to collect information on a range of topics related to the experience and behaviour of individuals and households during lockdown.

The combination of the closure of schools and the broader lockdown/confinement measures affected the life of children and their families, transforming children's educational experience during the duration of confinement. The setting in which education took place moved from school buildings to the family home for most children. The mode of instruction shifted from face-to-face contact with teachers/instructors to some form of remote learning, often supervised by parents. The home and social environment of children was also affected in many ways that, in its turn, may have affected the educational experience of children. In-person contact with people other than household members was severely restricted. The working arrangements of many parents changed, often dramatically. Many were laid-off on a temporary or permanent basis and many others had to work from home. In addition, parents faced a range of stresses associated with the pandemic: about the health of family and friends, the education of their children, their work, and finances.

While related and interacting with one another, two different aspects of the health crisis should be separated: (1) school closures and education continuity from home (or under new arrangements) for children, and (2) the general social and family environment in which this took place. While the latter is also relevant to the experience of learning under lockdown, the focus of this chapter is the first aspect. Two broad issues regarding school closures are explored: the nature of the educational experience of primary and secondary education students during the period of school closures, and the effect of school closures on students learning.

The presentation covers four main topics: aspects of schooling during lockdowns; learning time during school closures; parental and family involvement in children's

learning; and the positive and negative aspects of home learning. The focus on these topics reflects the fact of which data is available. At the same time, they represent topics of considerable interest for policy makers and analysts wishing to understand the experience of school education during lockdown and its consequences (which is itself one of the reasons that data was collected on them). Whenever possible, the equity dimension (the differences in the experience of pupils from different social backgrounds) is explored.

The approach adopted is deliberately descriptive. This is an inevitable consequence of the small number of countries from which data is available, as well as the partial nature of the data available. While a detailed comparative analysis of the experience and outcomes of Covid-related school closures in different countries would be fascinating, the data does not permit it at this time. The point is rather to present the available information from good quality studies on topics relevant to understanding the experience of learning during school closures with the aim of empirically grounding examination and discussion of these issues in actual examples.

## **15.2 Aspects of Schooling During Lockdowns**

### ***15.2.1 School Building Closures Meant that Most, but not All Students, Changed the Location and Form of Their Schooling***

In most, though not all, countries across the world, the measures implemented to control the spread of the Covid-19 virus during the “first wave” of the pandemic from late February to June 2020 involved generalised “lockdowns”—restrictions on movement and the size of gatherings (public and private), the closure of a range of businesses and other institutions, including schools and other educational institutions such as vocational colleges and universities. The duration of school closures over the period February to the end of June 2020 (the end of the school year in the northern hemisphere) was between 0 and 19 weeks (including vacations) in OECD countries, depending on the level of schooling. Accounting for vacations in this period (around 2–3 weeks in most countries), closures meant the substitution of 4–9 weeks of face-to-face instruction with home-based learning in most OECD countries (OECD, 2021). In those countries in which schools were reopened for face-to-face instruction before the end of the 2019–20 school year, the reopening of schools was often staggered. Different year groups returned at different dates and pupils did not necessarily return on a full-time basis. In addition, some parents continued to keep their children at home even if they belonged to the age or year groups eligible to return to school. In some countries, schools continued to be closed from the end of July in the southern hemisphere or did not reopen at the start of the 2020–21 school year.

The closure of schools did not mean that all children undertook their schooling at home. In some countries (including those covered in this chapter), the children of

so-called “key” or “essential” workers, of parents who had difficulty looking after children at home during usual school hours, and children in vulnerable circumstances could continue to attend school in-person. The available information suggests considerable variations between countries regarding the proportion of children that attended school in-person during lockdowns. In England, the numbers of children attending school on any day during lockdown were low. From 20 March 2020 until 1 June 2020 when schools started to reopen, between 1 to 3% of enrolled pupils attended school in-person on any day (Gov.uk, 2020), with around 7% of parents in one study reporting that their child aged 5–16 years had attended school in-person during lockdown (NHS Digital, 2020, Table 4.1). In Australia,<sup>1</sup> 17% of parents/guardians reported that the child in their household attended school in-person (ABS, 2020, Table 3.1). In France, 31% of primary schools, 25% of lower secondary schools, and 6% of upper secondary schools remained open for attendance by children of essential workers (Barhouni et al., 2020, Fig. 7.1), but the number of students involved are not available.

In many countries, there was also a small group of children whose mode of learning was not directly affected by school closures—around 3% of school enrolments in the United States, where the phenomenon is the most widespread (Snyder, de Brey & Dillow, 2019, Table 206.10),<sup>2</sup> and less than 1% in other countries—e.g., Australia (Chapman, 2020), France (Assemblée Nationale, 2019), and England (Office of the Schools Adjudicator, 2020).

### ***15.2.2 Instruction and Instructional Materials Were Mainly Online or Paper-Based, Although Classes Were Sometimes Cancelled***

One of the features of schooling during school closures was the use of online resources and tools to deliver lessons and instructional materials, and to communicate with students. What was the balance between the use of online resources and tools to deliver lessons, access, transmit, and receive instructional materials and student work compared to other, more ‘traditional,’ means?

The use of online tools and platforms was the predominant mode of delivery of lessons and learning materials for students undertaking their education at home (see Annex B, Table 15.10), primarily through dedicated educational platforms, applications, or e-mail. Real time interaction with teachers represented a relatively small component of the educational experience of schoolchildren during school closures. In the United Kingdom, 25% of parents reported that their child had received real-time interactive learning in the previous seven days, while in England, 32% of parents reported that their child had received one or more online live lesson per day. Fourteen

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<sup>1</sup>Where less severe ‘lockdown’ measures regarding restrictions on business activities were implemented than many other countries.

<sup>2</sup>In the US Household Pulse, around 5% of parents/guardians in the US reported that their child was ‘already homeschooled’ in waves 1–6 (US Census Bureau, 2020, Education Table 1).

percent of German teachers stated that they had taught classes by video calls. In the US, the average total time spent by all students in households in contact with teachers was 4 h per week (see Table 15.4 below).

Paper materials provided by schools were also used by a reasonably sized minority of students, in most cases in conjunction with digital materials. In France, 11% of students received learning materials in the form of printed documents. In the US, 19–21% of parents/guardians reported that their child's classes had moved to a distance format using paper materials. Higher rates of usage of paper materials were reported in the United Kingdom, where 34% of children who were home-schooled used some non-digital resources provided by their school. From the supply side, teachers in Germany reported that 33% of learning resources were shared in the form of hardcopies via post or pickup, and 54% of US teachers reported using hardcopy materials as part of distance learning.

The extent of the use of online tools and resources for the delivery of instruction and materials increased with the age of pupils and level of education. The proportion of teachers in France suggesting activities to students that required use of a computer connected to the internet was lowest at primary level and highest at upper-secondary level (see Annex B, Table 15.10). In the United Kingdom, the proportion of children using of school-provided real-time interactive online learning increased with the age of the oldest child and the use of school-provided non-digital resources declined (ONS, 2020, Table 2). Similarly, the share of students having one or more online live lesson per day in the United Kingdom was higher for secondary students (36%) than for primary students (27%) (Benzeval et al., 2020).

The United States is the only country in which there is information on the use of different modes of remote instruction by parental characteristics. The proportion of households in which some or all of children's classes moved to a distance learning format using online resources increased with the educational attainment of the respondent and household income; it was also associated with ethnic background. Classes were more likely to have moved to online delivery among households in which the respondent was white or Asian (78% and 82% respectively), than Black (65%) or Latino/Hispanic (72%) (US Census Bureau, 2020, Education Table 2).

The positive relationship between education and income and being a member of a Black or Hispanic/Latino household, and the probability of some or all of children's classes moving to online delivery may have reflected a deliberate choice on the part of their schools to use paper-based materials due to the difficulty (real or perceived) for their students to access materials online. The data suggests, however, that rather than compensate for difficulties with online access by using paper-based materials, schools may have chosen simply to cancel some classes. There were only small differences in the proportion of households in which some or all of children's classes moved to a distance learning format using paper materials sent home according to the characteristics of the respondent. At the same time, children in low-educated and



low-income households and children in Black and Hispanic/Latino households were more likely than children in more advantaged households to have some or all their classes cancelled.<sup>3</sup>

### ***15.2.3 Access to Digital Devices and Networks Was Limited for a Sizeable Minority of the Population***

Given the reliance on online delivery of instruction, learning materials, and online communication between students and teachers, access to the necessary devices and networks was essential for students to continue their schooling successfully. What evidence is there regarding access to digital devices and the Internet during the period of school closures and the extent to which access was related to student's socioeconomic background?

A substantial minority of households and students (Table 15.1) experienced difficulties with access.

Unsurprisingly, access to digital devices and a reliable internet connection was related to social background. In the United Kingdom, lack of devices was more often cited by parents as a reason for their children struggling to continue their education in low-income households than high-income ones. However, no clear relationship with level of parental education was observed (ONS, 2020, Table 4). In the United States, the proportion of parents reporting that it was very or somewhat likely that their child would encounter at least one of three digital obstacles to doing their schoolwork at home (“needing to use a cell phone,” “using a public Wi-Fi network because no reliable internet at home,” and “being unable to complete schoolwork because they did not have access to a computer at home”) decreased with family income (Horowitz, 2020). The share of households with children in public or private schools with a computer always available for educational purposes also increased with household income (US Census Bureau, 2020, Education Table 3). Teachers in the United States working in high poverty schools were significantly more likely to report that their students lacked access to the internet and devices at home (Stelitano et al., 2020). The school or school district played an important role in the provision of computers for use by students in the US. Around 40% of parents/guardians reported that the child in their household had access to a computer provided by the children's school or school district for use outside school (US Census Bureau, 2020, Education Table 4). The use of a computer supplied by the school or school district was highest among households headed by low-educated and low-income adults and in households headed by Blacks, Hispanics, and Latinos. The importance of the school in the provision of devices in the US is confirmed by a survey in late April/early May 2020, in which

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<sup>3</sup>For example, the proportion of Black households (48%) in which children had some or all their classes cancelled (and not moved to other formats) was 10 percentage points higher than that of White households (38%).

**Table 15.1** Access to digital learning resources (equipment and connectivity)

	Proportion of households or students experiencing the problem
<b>Australia</b>	
No access to stable internet connection	15%
<b>France</b>	
Often or very often difficulties with connections or bugs (secondary students)	25%
Access to a difficult internet connection or no internet connection (secondary students)	30%
<b>Ireland</b>	
Adequate broadband not available	12%
Suitable devices not available	23%
<b>United Kingdom</b>	
Limited or no access to internet	7%
<b>United States</b>	
Computer sometimes, rarely, or never available for educational purposes	11–13%
Internet sometimes, rarely, or never available for educational purposes	8–10%
Very or somewhat likely that child will have to use public Wi-Fi to finish homework because there is no reliable internet connection at home	22%
Very or somewhat likely that child will not be able to complete schoolwork because they do not have access to a computer at home	21%

*Sources* Australia: ABS (2020), Table 3.1; France: Barhoumi et al. (2020), Fig. 2.4; Ireland: CSO (2020); United Kingdom: ONS (2020); United States: US Census Bureau (2020) Education Table 3, Vogels (2020)

78% of teachers indicated that their school provided students with devices (Stelitano et al., 2020). In contrast, in the United Kingdom, only 5% of parents who “home-schooled” their eldest/only child indicated that their child used a device provided by the school and 73% stated that they provided a device for their child (ONS, 2020, Table 2). Unfortunately, data on the source of the devices used by children to access instructional material and communicate with their school are not available for the other countries covered, which may reflect the fact that the provision of computers by schools was uncommon.<sup>4</sup>

<sup>4</sup>OECD (2021, Fig. 2.2) reports that over 80% of the countries providing data indicated that they offered support to “populations at risk of exclusion from distance education platforms” in the form of “subsidised devices for access (PCs or/and tablets)” during the first period of school closures. However, no information is available on what proportion of pupils had access to such support.

### ***15.2.4 Teachers May Have Lowered Their Ambitions Regarding the Content of Instruction***

The closure of school buildings meant that the delivery of education had to be adjusted to allow (most) students to continue their education in their homes. There is evidence from France and the United States that the content and focus of instruction and the amount of work pupils were expected to do was also adjusted to reflect the new circumstances of learning.

French teachers reported that the main priority of their school during the period of closure was to preserve their pupils' link with learning (53% of primary school and 58% of secondary school teachers), rather than to continue to advance with the teaching programme (cited by 5% of primary and 7% of secondary teachers) or the consolidation of students' learning (cited by 23% of primary and 12% of secondary teachers) (Barhoumi et al., 2020, Figs. 6.1 and 6.4). The results of the survey of US teachers in late April/early May 2020 suggest that they adjusted their expectations in similar ways. Only 12% of teachers reported covering all, or nearly all, of the curriculum that they would have covered had their building remained open. In response to the question of whether they were focusing on reviewing content that was taught before Covid-19 versus presenting new content, 46% indicated that they were focussing mostly or exclusively on review rather than introducing new content (Hamilton, Kaufman and Diliberti, 2020).

## **15.3 Learning Time During School Closures**

An important indicator of the effect of school closures and the associated changes to the mode of instruction on pupils' learning is the amount of time that school students devoted to educational activities during this period. This can be compared with normal instruction time at school to give an idea of the impact on the quantity of learning. While informative, some caution is advised in making such comparisons. On the one hand, the estimates of learning time at home are likely to be subject to reasonably large measurement errors as they are usually provided by parents, who may have an inexact understanding of how much time their children (especially older children) spent on schoolwork. On the other, official instruction time is not an error-free measure of the time pupils devote to learning either. Children attending classes are engaged in learning to varying degrees (from staring out the window to giving full attention to the lesson). In addition, in normal times, many students undertake schoolwork at home in the form of self-study, homework, and preparation for exams and tests.

### ***15.3.1 Around 10 to 20% of Students May Have Stopped Their School Learning Activities***

There is evidence that a small, though by no means negligible, proportion of students stopped (school-related) learning activities during the period of school closures. One measure of this is the proportion of students with whom schools had no contact. In the Czech Republic, schools lost contact with over 20% of upper-secondary students enrolled in the vocational track, and between 15 to 20% of students enrolled in primary and lower-secondary education (CSI, 2020). Smaller proportions of children were ‘lost’ to the system in France, where teachers estimated that they had lost contact with 6% of primary school students and 10% of secondary students in their classes while schools were closed (Barhoumi et al., 2020, Figs. 1.9 and 1.10). In line with these estimates, 8% of parents of French high school students indicated that their child had not done any schoolwork set by their teachers during the period of school closures (Barhoumi et al., 2020, Fig. 2.8). In the United Kingdom, 17% of 16–18-year-olds in full-time education surveyed between 7 May and 7 June 2020 indicated that they had *not continued* with their education in the previous week<sup>5</sup> (ONS, 2020, Table 5).

In addition, there were children who did not receive any schoolwork from their schools. In the United Kingdom, for example, around 10% of parents of schoolchildren reported that their child had not received schoolwork to complete at home in April 2020 (Eivers, Worth & Ghosh, 2020). The proportion was highest for children in upper-secondary schooling. Around 25% of the parents of children in Key Stages 4 and 5 (years 10–12) indicated that their child received no schoolwork. For children preparing for exams (e.g., GCSE and A-levels), this may have reflected the fact that they had already covered the relevant curricula by the time schools had closed and there was no need to undertake further study during a period normally devoted to exam revision. In other data from the United Kingdom, 25% of parents reported that children who were educated at home had not undertaken activities using materials provided by their school in the preceding week (ONS 2020, Table 2). It is not possible to determine whether this was because no schoolwork was provided or because children and/or their parents decided not to use it.

### ***15.3.2 Students Spent About Half Their Normal “in-Person” Time on School-Related Learning Activities***

The amount of time students spent on schoolwork during the period of school closures is a topic covered in several surveys. The data collected is not completely comparable, however, in terms of the definitions of schoolwork, the reference period (an average day, the previous week), or the exact populations covered. For this reason, Tables 15.2,

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<sup>5</sup>The estimate is based on small numbers, however, and is associated with a large margin of error.

**Table 15.2** Average hours per day school students spent on schooling/learning activities provided by their school during lockdown by level, France, and Ireland: distribution and total

Country	Level	Average Hours per Day (% of students)					Average hours
		Less than 1 h	1- less 2 h	2- less 3 h	3- less 4 h	4 or more hours	
France	Lower Secondary	9	21	29	22	20	2.8
	Upper Secondary (general)	11	21	26	20	23	2.8
Ireland	Primary	n/a	25	42	23	11	1.9
	Secondary (total)	n/a	17	24	19	39	3.1
	Senior Secondary	n/a	11	13	22	54	3.6

Sources France: Barhouni et al. (2020), Fig. 5.1; Ireland: CSO (2020), Tables 2.3 and 2

Note Average hours estimated by the authors

15.3 and 15.4 present the available information separately for France and Ireland (Table 15.2), the United Kingdom (Table 15.3), and the United States (Table 15.4). In each of the countries concerned, the source of the estimates is a parent/guardian or another adult in the household.

The situation in the United Kingdom is very similar to that in France and Ireland. At the primary level (ages 5–10), the estimated average hours per day devoted to

**Table 15.3** United Kingdom: average time spent by the oldest or only child in the household on learning using materials provided by their teachers in the previous week

Age/Level	Average hours per week (% of students)					Average hours per week	Average hours per day
	0 h	1–10 h	11–20 h	21 plus hours			
5–10 years <sup>1</sup>	2	59	32	8		10	2
Primary <sup>2</sup>	–	–	–	–		–	2.4
11–15 years <sup>1</sup>	–	38	35	28		16	3.2
16–18 years <sup>1</sup>	3	39	37	21		15	3
Secondary <sup>2</sup>	–	–	–	–		–	3.0

Sources (1) ONS (2020), Table 2; (2) Pensiero et al. (2020)

Note The estimates from ONS (2020) concern the following population: parents/guardians in households with dependent children aged 5–18 years who (a) indicated that they had home-schooled their child/children and (b) indicated that the eldest or only child in the household being home-schooled had used resources provided by the school. This represents 66% of all parents/guardians with dependent school-age children. As a result, this will over-estimate the average time spent by school pupils on schoolwork

**Table 15.4** United States: Average hours per week spent on different learning/teaching activities by household – total and by number of children under the age of 18 in the household

	Average Hours per Household per Week
Total	23.2
Live contact with teachers	4.0
Teaching activities by Household members	11.3
Students' own activity	7.9

Source US Census Bureau (2020), Education Table 1

Note 'Live contact with teachers' and 'Teaching activities by Household members' equals average for Waves 1–6. 'Students' own activity' is the estimate from Wave 6 only

schoolwork by students during lockdown was 2 and 2.4 h depending on the data source. At the secondary level, the estimates were between 3.0 and 3.2 h (Table 15.3).

In the United States (Table 15.4), an average of 23 h per calendar week was spent on learning/teaching activities per household. A direct comparison of this figure with the estimates in England, France, and Ireland is impossible for two main reasons: (1) it represents the sum of the hours spent by all children *in the household* on learning activities and all hours spent by *all household members* on teaching activities with children rather than hours per individual child, and (2) learning/teaching activities are not limited to those based on materials or lessons provided by schools.

In France, Ireland, the United Kingdom, and the United States, the school week generally involves around 4.5–6 h of instruction time per day (23–30 h per week) depending on the country (and in the United States and the United Kingdom, states or regions within countries and even individual schools) and the level of schooling (see for France, Ministère de l'Éducation Nationale, 2021; for Ireland: Gov.ie, 2019; and for the US: NCES, n.d., Table 15.14). Thus, in the four countries for which we have data, the average amount of time (per day or per week) that school pupils spent on schoolwork (however defined) during the period of school closures was less than the hours of instruction time that they would have received at school in 'normal' conditions. In England, France, and Ireland (unfortunately the US data does not lend itself to such a calculation), this represents about half the usual instruction time (about 3 h compared to the 5–6 h of formal instruction per day, depending on the level of schooling). In addition, as noted above, in 'normal' conditions, many students would also spend some time undertaking additional schoolwork or study activities at home.

As can be seen from Tables 15.2 and 15.3, there was considerable variation in the time spent on schoolwork by individual children. In normal conditions, the time spent by pupils being instructed in classes will not vary greatly, as this is set by the school timetable and the relevant regulations. Variation in the time devoted to schoolwork will be due largely to time spent on schoolwork at home by students (e.g., in the form of study, revision, homework, completion of assignments, etc.). In the period of school closures, time spent on schoolwork was to a greater or lesser extent determined by the students themselves and their parents as opposed to the 'institutional constraints' of timetabled classes.

### 15.3.3 *Time on Schoolwork Shows no Strong Relationships with Parental Education or Household Income*

The time children spent on schoolwork during school closures shows no clear relationship with either the level of education of parents/guardians (Table 15.5), household income, or ethnicity.

Of the four countries for which data is available regarding the level of education of parents/guardians, the United States is the one country in which hours of schoolwork (in this case, total hours of live contact with teachers and hours spent on their own learning by children in the household) shows a positive relationship with the education level of parents/guardians.

Data on hours of schoolwork during school closures is available by the respondent's income (UK) and household income (US), and by ethnic background (US). Hours of schooling are highest for students with a parent in the highest income group in the United Kingdom (ONS, 2020, Table 2), but no association exists between household income or ethnicity and hours of schoolwork in the United States (US Census Bureau, 2020, Education Table 1).

## 15.4 Parental and Family Involvement

Given the limited direct contact students had with teachers, parents and guardians had to take over much of the role of the supervision of their children's education (including instruction) during the period of school closures. In this section, we explore the role parents, guardians, and other family members played in the education of children.

**Table 15.5** Hours of schoolwork by parents' level of education

Education of parent/guardian	Ireland		United Kingdom		United States	
	Student Primary Average hours per day	Student Secondary Average hours per day	Student <sup>1</sup> Hours per week on school materials	Student <sup>2</sup> % 1–2 h or less per day	Live contact with school <sup>3</sup> Average household hours per week	Students' own learning <sup>4</sup> Average household hours per week
Low	2.1	3.0	12	38	4.0	7.2
Medium	2.3	2.8	16	37	4.1	8.1
High	2.1	3.2	13	34	4.3	8.9

Sources Ireland: CSO 2020 (b), Tables 2.3 and 2.6; UK: (1) ONS (2020), Table 2 and (2) Pensiero et al. (2020); US: US Census Bureau (2020), Education Table 1; (3) average over weeks 1 to 6 of the survey; (4) data from week 6 only

Note Low education = full secondary education or lower; Medium education = post-secondary non-degree qualification; High education = university degree or higher

What proportion of parents assisted their children and how much time did they spend doing so? What assistance did they provide and how comfortable were they with supporting their children's education?

### 15.4.1 *Younger Children Received More Assistance from Parents*

Data on whether parents/guardians assisted their children with their schooling during lockdown is available for France, the United Kingdom, and the United States (Table 15.6). The French data refers to the proportion of students reporting that they were assisted by their parents, and the UK data to the proportion of parents reporting that they "home-schooled" their eldest/only child. High proportions of parents/guardians aided with their children enrolled in primary and lower secondary education. In both countries, the proportion of parents assisting their children declined with the age of the child and the child's level of education. This is likely to reflect the greater autonomy and independence of older children and the lesser expertise of parents concerning the content of the curriculum in the later years of high school.

In France and the United Kingdom, in addition to having a greater probability of receiving assistance from their parents/guardians, younger children (in lower grades) also received more assistance than older children (in higher grades). The

**Table 15.6** Parental assistance for children's schooling (France, United Kingdom, US)

Country	Level of schooling/age of pupils	% Of pupils reporting receipt of assistance from parents	% Of parents reporting providing assistance to children
France	Lower Secondary	73	
	Upper Secondary (general)	36	
	Upper Secondary (vocational)	50	
UK	Total		87
	Child aged 5–10 years		96
	Child aged 11–15 years		89
	Child aged 16–18 years		65
US	Children in elementary, middle, and high school		91 <sup>a</sup>

Sources: France: Barhouri et al. (2020); Fig. 2–5; UK: ONS (2020), Table 2; US: Horowitz (2020)  
*Note* <sup>a</sup>Parents stating that they or another adult in the household were providing additional instruction or resources to their children beyond what was provided by the school. This includes 68% of parents reporting that they (or another adult) provided 'some' or 'a lot' of additional instruction or resources and 22% who reported providing 'not much'



**Table 15.7** Hours of assistance by parents (France and UK)

Country	Level	Average hours per day (% of parents)		
		Less than 1 h (%)	1- less 2 h (%)	2 h or more (%)
France	Lower Secondary	40	24	36
	Upper Secondary (general)	70	17	12
UK	Primary	21	34	45
	Lower Secondary	60	26	14
	Upper Secondary	90	8	2

Sources France: Barhoumi et al. (2020), Fig. 5.2; UK: Benzeval et al. (2020)

time devoted by parents to assisting their children per day decreased as the level of their children's schooling increased (Table 15.7). A large proportion of parents in both countries reported that they provided very little support to children enrolled in academically oriented upper-secondary education. In France, 40% of parents of students in lower-secondary education and 70% of parents of students in upper-secondary general education assisted their children for less than 30 min per day. In the United Kingdom, 60% and 90% of parents for lower- and upper-secondary students respectively assisted their children for less than an hour per day. The average time devoted by parents in the United Kingdom to assisting children is estimated to be 2 h per day (of assistance) to primary school children and 0.9 h per day for secondary students (Pensiero et al., 2020). In the United States, the total average time devoted to teaching activities during school closures by parents/guardians was around 12 h per week – per household rather than per parent (see Table 15.4).

As expected, the amount of time parents devoted to assisting children with schoolwork was higher for most (but not all) parents during the period of school closures than was usually the case. Overall, 65% of the parents of French high school students said that they spent more time than usual during confinement helping their children with schoolwork, 21% as much time as usual, and 8% less time (Barhoumi et al., 2020, Fig. 5.5). In Italy, two thirds (67%) of adults who cared for children of 0–14 years of age during lockdown reported spending more time in childcare activities (both homework and play) compared to an average pre-Covid day, 30% the same amount, and 3% less time (Istat, 2020, Fig. 4).

There is little evidence of a close relationship between parental socio-economic status and the provision of assistance by parents in the available studies. In the United Kingdom, no relationship is observed between the level of parental education or income and the “provision of home schooling” (ONS, 2020, Table 2) or the hours of assistance provided by parents (Benzeval et al., 2020). A similar picture is seen in the United States, where no clear relationship exists between either parental education or income and the total hours spent by household members on teaching children (US Census Bureau, 2020, Education Table 1), or between income and the provision of additional instruction and resources (Horowitz, 2020). This is somewhat contrary to expectations. However, it is possible that parents with higher levels

of education and income had less available time to assist their children during the period of lockdown than their less-educated and lower-paid counterparts. The incidence of temporary inactivity (e.g., furlough, temporary layoff) during lockdowns was lowest for employees in management and professional occupations—i.e., occupations associated with high levels of education and high incomes.

### ***15.4.2 Around Half or Less of Parents Felt Capable to Assist with Their children's Remote Education***

The shift of the setting of school education to the home placed a large responsibility on parents/guardians for supervising and guiding their children's education. How comfortable with and prepared for the role were parents/guardians?

In both the United Kingdom and the United States, slightly less than half of the parents/guardians of school children appeared comfortable in their ability to support the home schooling of their children. At the end of April 2020, only 45% of parents/guardians in the United Kingdom agreed that they were confident in their abilities to support schoolwork of their children within their household, even if a much larger share (75%) believed that they had access to the resources they needed to help them “home school” their children/child well (ONS, 2020, Table 1). In a national survey of parents of K-12 students in the United States, 56% of parents reported that their child's remote learning had been difficult or very difficult for themselves and their spouse/partner (Jones, 2020b). Consistent with this, in May 2020, two-thirds (68%) of US parents reported that knowing how to teach children in ways they could learn had been a challenge in terms of the remote distance education of their child (Jones, 2020a).

Very similar results were found in France. Around half or more of French parents of secondary students had some problems finding the time to assist children (51%) and helping their children understand lessons (48%), with slightly lower proportions having at least some problems helping their child understand instructions from teachers (42%) or finding information about the schoolwork that needed to be completed (40%) (Barhoumi et al., 2020, Fig. 5.4).

In Ireland, parents seemed even less confident (CSO, 2020). When asked in August 2020 whether they were concerned about their capacity to provide adequate home learning support if their child's primary school was closed in the new school year, 85% of Irish parents of primary school students indicated that they had some concerns, with 51% being very or extremely concerned.

The available evidence regarding the relationship of socio-economic status and parents' perceptions of their ability to provide support for their children's education is ambiguous, if not contradictory. In the United Kingdom, parents with higher degree qualifications were more likely than other parents to agree that they were confident in their abilities to “home school” the children/child within their household. However, confidence in the ability to support children in their remote schooling was unrelated to

income (ONS, 2020, Table 1). In contrast, in Ireland, parents with higher education qualifications were more likely to be ‘very’ or ‘extremely’ concerned about their ability to provide adequate home learning support if schools were closed in the new school year than parents with a highest qualification at secondary level or lower, and less likely to be “not at all” concerned (CSO, 2020). The reasons for the differences in the views of highly educated parents in the UK and Ireland must remain the object of speculation.

## **15.5 Home Learning: The Positives and Negatives**

Did the arrangements put in place to support home learning during school closures allow children to maintain their link with schools and teachers and to continue to learn effectively? Two main types of information relevant to this question exist. First, there is the perception of actors involved. Several surveys sought the views of parents concerning the support provided to their children during the period of closures and remote learning and the difficulties experienced by their children. Second, there are a small number of studies that have compared results on standardised tests for students in the cohorts affected by the pandemic with results for students in the same tests in previous years.

### ***15.5.1 Parents Had Mixed Views: They Were Appreciative of Schools’ Efforts, but Very Concerned About Their children’s Learning***

How satisfied were parents with the home-schooling experience and the support offered by schools, and how did they assess the impact of the period of home schooling on children’s learning and social development? Overall, parents/guardians had mixed views. On the one hand, for the most part, they considered that their children had continued with their education and appreciated the efforts made by schools and teachers during the period of school closures. On the other, they were concerned about effects of school closures on their children’s education and, in some cases, on their broader social development.

Over three-quarters of the parents of French secondary school students believed that the activities offered by teachers during the period of school closures had been beneficial to their children (81% of the parents of lower-secondary school students and 75% of the parents of students). They also saw positive effects in terms of increased autonomy of their children (60%) and in the discovery of new methods of learning (60%) (Barhouni et al., 2020, Figs. 4.5 and 4.6). The amount of work that schools gave to their children was seen as appropriate by nearly two out of three parents of secondary school students, with between 16 and 23% of parents seeing

it as being too much and between 12 and 20% as too little (depending on the level) (Barhouni et al., 2020, Fig. 2.12) At the same time, most were of the view that while their children's learning had been maintained (66%), it had not progressed (58%) and reported no perceived improvement in their children's level in certain subjects (63%) (Barhouni et al., 2020, Fig. 5.7).

In the US, around four in five parents (83%) reported being satisfied with the way their children's school had been handling instruction during school closure (Horowitz, 2020), and high proportions of parents rated their child(ren)'s school as doing an excellent or good job in terms of teachers availability to answer questions (77%), communication about the distance education programme from the superintendent and/or principal (71%), provision of materials and equipment needed for the child to do schoolwork (75%), and communication about specific assignments from teachers (72%) (Jones, 2020a). Satisfaction with schools was nevertheless accompanied by concern about the impact of home schooling on their children's educational progress. In late March 2020, 42% of parents of K-12 students were "very" or "moderately" concerned that the pandemic would have a negative impact on their child's education (Brenan, 2020) and, in a poll conducted in early April 2020, 64% of respondents were concerned about their children falling behind because of the Corona virus outbreak (Horowitz, 2020).

Some 70% of parents in the United Kingdom agreed that children within their household were continuing to learn whilst being schooled from home. At the same time, 43% of the same parents agreed that remote schooling was negatively affecting the well-being of their children, and 42% of parents agreed that their oldest (or only) children were struggling to continue their education remotely (ONS, 2020, Table 4).

In Ireland, in August 2020, only one-third (36%) of parents of secondary school students were worried about their child returning to school because they had fallen behind due to lockdown (CSO 2020, Table 3.6). However, most parents/guardians had a negative impression of the impact of enforced school closures (CSO 2020, Tables 2.1, 2.2, 2.4 and 2.5). Closures were seen as having a major or moderate negative impact on students' learning by 41% of parents of primary and 46% of parents of secondary students and on their social development (42% and 23% respectively). Few parents/guardians of either primary or secondary students (close to 15% in both cases) viewed the impact of school closures as neutral or positive on either their children's learning or social development. Irish parents were also rather negative about their child's school in providing adequate home learning support should schools be closed again, the implication being that they were not particularly happy about the support provided during the closures earlier in the year. Some 38% of parents of primary school students were very or extremely concerned, with only 23% not being concerned at all. Concerns were greatest regarding children in secondary school. The share of parents who were very or extremely concerned about schools' capacity to support home learning rose to 52% in the case of children enrolled in the junior secondary certificate, and 72% for those enrolled in the leaving certificate.

### ***15.5.2 The Performance of Students on Standardised Tests Compared with that of Their Peers in Previous years***

The concerns of parents that their children’s learning had not progressed during the period of school closures to the extent that it would have in normal circumstances are echoed by many other commentators. Claims regarding potentially dramatic “lifelong” learning losses and the widening of inequality and long-run economic costs have been made based on simulation studies (see, for example, Azevedo et al., 2020 and Hanushek & Woessman, 2020). Comparisons of the results in standardised tests administered in 2020 following the return of students to school with those in similar tests for students in the same year level in earlier years provide an important source of empirical information regarding the academic progress of pupils during this period. Testing programmes were interrupted due to the pandemic in many countries. However, testing continued in a few others and several comparisons of the performance of students experiencing school closures in 2020 with students in the same year of schooling in 2019 and earlier years have been released. Table 15.8 presents the results of five studies (using data from England, France, Flanders, the Netherlands, and the US).

The most comprehensive and highest quality data concerning the academic progress of the cohort of students affected by school closures comes from France. Results from annual national tests conducted at the start of the school year for students in Years 1, 2, and 6 and in the middle of the year for students in Year 1 have been released for the 2020/21 school year. The tests had very high rates of participation by schools and students in all years covered (including 2020 and 2021). In the other studies, the data come from non-representative samples of schools (England, the Netherlands, the United States) or suffers from low participation by schools in the 2020 testing round (Flanders). In addition, in the countries in which the tests were conducted at the end of the 2020 school year (Flanders, the Netherlands, and the United States), rates of participation by students were low.<sup>6</sup>

Results vary widely. Improvement, as well as stability and decline (both small and large) in the performance of the ‘Covid cohorts’ relative to their peers tested in previous years is observed (Table 15.8). In France, the performance of the cohort of Year 6 students tested at the start of the 2020–21 school year improved relative to their peers tested in 2019 in both French and mathematics, with the improvement being more pronounced in French than in mathematics. The performance of the 2020–21 Year 1 cohort tested in mid-year also improved compared to the 2019–20 cohort in both domains. Interestingly, its performance had fallen relative to students tested in the previous year cohort in the tests conducted at the start of the year, suggesting that, during the first six months of the 2020–21 school year, these pupils had caught up on any instruction that they had missed in March–June 2020. Stability or small declines in performance were found in France (Year 2 in French and mathematics), Flanders (social science) and the United States (reading). Large declines were observed in

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<sup>6</sup>The effects of selection biases and non-response on the representativeness of the results are argued to be negligible by the authors of all the studies concerned.

**Table 15.8** Comparisons of performance on standardised achievement tests, 2020 and previous years

Country	Date of test in 2020	Comparison years	Students tested	Subjects	Differences with comparison years	Socio-economic background effects	Analysis	Data source	Strength of evidence
England	11/2020	2017	Year 2	Reading Mathematics	Decline Decline	Achievement gaps reported to widen for disadvantaged students	Comparison with 'benchmark' values for 2017	A self-selected sample of 168 schools administered NFER reading and mathematics tests to Year 2 pupils. Results compared with standardised scores on the same tests in 2017	+
			Year 1 (Start of year)	French Mathematics	Slight decline Slight decline	Performance gaps between schools with high proportions of disadvantaged students and other schools increase slightly with greatest increase for students in Year 2	Comparisons between years for total student population and subgroups	National standardised assessment of students at the mid-point of Year 1. Results cover 800,000 students in 32,000 primary schools in 2020	+ + + + +
France	09/2020	2019	Year 1 (mid-year)	French Mathematics	Slight increase Slight increase			National standardised assessment of students starting Year 1 or Year 2. Results cover 1.6 million pupils in approximately 31,000 primary schools in 2020	
			Year 2	French Mathematics	Decline Slight Decline				
			Year 6	French Mathematics	Increase Increase	Performance gaps decline for French and increase slightly for maths in schools with higher proportion of disadvantaged students		National standardised assessment of students starting Year 6. A total of 810,000 students were tested in 7 000 secondary institutions in 2020. The response rate for schools was 97% and for students 92% in French and 93% in maths	

(continued)

**Table 15.8** (continued)

Country	Date of test in 2020	Comparison years	Students tested	Subjects	Differences with comparison years	Socio-economic background effects	Analysis	Data source	Strength of evidence
Flanders	06/2020	2019	Year 6	Dutch	Decline	Learning losses found to increase with the share of students in schools with low socio-economic status	Multivariate analysis on pooled data with controls to identify net Covid cohort effect	Results from standardised tests administered by the network of catholic schools in Flanders at the end of Year 6. The sample comprises 402 schools in 2020, 1164 schools in 2019, 1152 schools in 2018, 1062 schools in 2017, 1034 schools in 2016 and 1018 schools in 2015	+++
				Mathematics	Decline				
				Social Science	Slight Decline				
				French	Decline				
				Science	Decline				
Netherlands	01–02/2020 and 06/2020	2017, 2018, 2019 (pooled)	Years 4–7	Composite scale: mathematics, spelling and reading	Decline	Learning losses found to be up to 60% larger among students from less-educated homes	Multivariate analysis on pooled data with controls to identify net Covid cohort effect	Data from a database covering 15% of primary schools in the Netherlands. Results are from mandatory tests conducted in January/February and June each year in mathematics, spelling and reading. For students enrolled in 2020, there is a high proportion of missing data for the June 2020 test results	+++

(continued)

**Table 15.8** (continued)

Country	Date of test in 2020	Comparison years	Students tested	Subjects	Differences with comparison years	Socio-economic background effects	Analysis	Data source	Strength of evidence
United States	Autumn 2020	Autumn 2019	Years 3–8	Reading Mathematics	No change Decline	No evidence for achievement gaps increasing by race. Some evidence for increasing gaps by poverty level of school	Comparisons between years on sample of schools for which results are available in both 2020 and 2019	Sample of U.S. public schools from NWEA database that tested at least ten students in each grade in both fall 2019 and fall 2020 using MAPS assessments. The sample included 3,267,867 unique students in 8,961 schools in reading and 3,249,883 unique students in 8,874 schools in maths	+++

Sources: England: Rose et al. (2021); France: Andreu et al. (2020a, b, 2021); Flanders: Maldonado and De Witte (2020); the Netherlands: Engzell, Frey and Verhaegen (2020); US: Kuhfeld et al. (2020)



England (maths and reading), Flanders (Dutch, French, maths, and science), the Netherlands (a composite measure), and the United States (maths).

Evidence regarding the differential impact of the disruptions to education caused by school closures by socio-economic background is also mixed. The French and US studies find little evidence of widening socio-economic gaps in performance between 2020 and previous years. In fact, in France, performance in French improved marginally more for students in Year 6 who attended schools belonging to “priority education networks” that catered for pupils from lower socio-economic backgrounds conditions than for other students. However, in mathematics, students in these “priority education” schools improved to a lesser extent than that of their peers in other schools (Andreu et al., 2020a, p. 37). The studies using Dutch (Engzell, Frey & Verhagen, 2020) and Flemish data (Maldonado and De Witte, 2020) find that the performance decline of the Covid cohorts relative to pre-Covid cohorts is greater among students from lower socio-economic backgrounds. The English study comes to similar conclusions by inference rather than observation (Rose et al., 2021, pp. 10–12), and the evidence is unconvincing.<sup>7</sup>

The difference in the results found in these studies is intriguing and its explanation is beyond the scope of this paper. Apart from issues of sampling and missing data mentioned above, the timing of testing may have some impact. The French assessments were undertaken at the beginning of the 2020–21 school year (September 2020) in conditions far closer to the ‘normal’ conditions that applied in previous testing rounds than was the case for tests conducted in June 2020. In addition, the extent to which the tests evaluate knowledge directly related to the content of the curriculum may differ. For example, the French assessments are primarily diagnostic in focus rather than intended to evaluate what had been learnt in the previous year.

The scale of the effects estimated in the English, Dutch, and Flemish studies deserves some comment. The Flemish study concludes that, on average, the average gain in performance of Year 6 students in 2020 was only half to one-quarter of that expected in a normal year. This effect seems implausibly large. The implication is that the substitution of remote schooling for school-based instruction for a period of seven weeks<sup>8</sup> (around 20% of yearly instruction time) resulted in a reduction of 50–75% of the normal yearly learning gain. At face value, the Dutch and English results seem more credible, as they suggest that pupils learnt about 80% of what they would be expected to learn in a normal year. However, even here, the inference is that students at best maintained the level of improvement they had achieved when their schools closed—which is surprising given that most students continued some form of school learning from home during the school closures. At the same time, the results that suggest no impact of the disruption to schooling on performance also raise questions. They stand in contrast with the evidence that while most pupils

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<sup>7</sup>The 2017 comparison sample “does not provide data on the performance of disadvantaged and nondisadvantaged pupils” (Rose et al., 2021, p. 10). The authors, instead, compare the standardised achievement gap observed among the 2020 sample with that derived from another assessment carried out in 2019 to estimate whether the gap has grown.

<sup>8</sup>Nine weeks of the normal school year including two weeks of holidays over Easter.

continued with their education, they spent less time, on average, in learning activities than they would have done had the 2019–20 school year continued as normal.

In the end, however, time will be needed before we have a good understanding of the short- and long-term consequences of the period of school closures during the first wave of the pandemic on the achievement and broader development of students. Placing the results for 2020 in the context of longer-term trends is essential for their interpretation, and the next waves of testing programmes will provide vital information. For the moment, considerable caution should be exercised in attributing a causal relationship between the disruption to children’s education due to lockdowns and school closures, and changes to performance for students of the same age at the same stage in their education tested in 2020 and in previous years (not to mention longer time intervals). Many factors can lead to variations in performance between different cohorts at the same point in their schooling: different past experiences, variation in the distribution of demographic and other characteristics in different cohorts, measurement errors (including variation in tests and their administration), and in the case of sample studies, sampling errors. Adjustments can be made to account for some of these factors in analysis, but not for others.

## 15.6 Summary and Conclusion

The aim of this chapter is to provide the reader with examples of the experience of education during the first months of the Covid-19 pandemic in high-income countries, drawing on data derived from representative samples. The data which meets this condition is restricted to a small number of countries—France, Ireland, the United Kingdom, and the United States—supplemented by information, where available from Australia, the Czech Republic, Flanders, Germany, Italy, and the Netherlands. There is also variation in the coverage and treatment of different topics in the different surveys, and often the information collected on similar topics in different surveys is not entirely comparable. This data provides an important, if incomplete, insight into the educational experience of schoolchildren and their families during the school closures and lockdowns of March–June 2020.

### 15.6.1 *The Overall Picture*

The closure of schools appears to have led to some students disengaging from their school learning. There is evidence that 10% to 20% of students may have discontinued their school learning in some countries during the “remote learning” period.

In almost all the countries for which information is available, students spent on average about 3 h per (school) day doing schoolwork at home—about half the face-to-face instruction time they would have received at school. Students received assistance from their parents (and from their other family members), but this assistance was

fairly limited in duration and scope and decreased as students got older. The most common form of remote schooling in the OECD countries, for which representative information is available, was for teachers to send online resources/exercises to their students—most of the time through online platforms, sometimes also by e-mail, and more rarely as paper worksheets. Teachers also provided virtual instruction and assistance, but to a relatively limited extent.

The time spent on learning during school closures was related to the age of children. Younger children generally spent less time on schoolwork than older children. In part, this reflects the fact that instruction time in normal school settings is less for primary school than secondary students. In addition, schools and teachers may have wished to avoid overburdening young children (and their parents) with schoolwork and focused on facilitating a continuing link with school and the maintenance of study habits, rather than covering all aspects of the normal curriculum. Younger children also received more assistance from their parents, probably because they needed more, being less able than their older counterparts to work autonomously.

Parents offer a rather mixed evaluation of the impact of lockdowns and school closures on children's development and educational progress. High levels of appreciation of the work of schools and teachers during school closures was accompanied by concerns regarding the effects of lockdowns and school closures on children's educational and social development. While most children maintained a link with school and there were some positive features of home schooling for children, such as increasing autonomy in learning and the discovery of new methods of learning, many parents were concerned about lack of progress in some subjects and the possibility that their children were falling behind.

The empirical evidence regarding the extent to which school students 'fell behind' or failed to make the same gains in achievement as they would have in normal circumstances ("reduced learning gain" is probably a more accurate description than the often used "learning loss") is restricted to results from a small number of studies of varying quality and generalisability. Both small improvements and large declines in performance between students tested in 2020 and those tested in previous years have been reported. The most robust available study, from France, suggests that it is possible that the differences in achievement between the students affected by closures in 2020 and students at the same level tested in 2019 was negligible (with both small positive and small negative changes being found). At the other end of the scale, large declines in achievement (in some cases implausibly so) were also found in the studies using data from England, Flanders, the Netherlands, and the United States (in mathematics but not reading). However, these studies were based on convenience samples and/or had low rates of participation by schools and students in 2020. At this point, any judgement on this question must remain provisional. More studies using high quality data representative of the student population are needed.

### 15.6.2 *The Equity Picture*

A major concern in all countries is the possible differential consequences of school closures, lockdowns, and the pandemic more generally on schoolchildren from different social backgrounds. Given the well-documented inequalities in housing conditions, access to technology and connectivity, in the educational services they get from their schools, as well as on the impact of Covid on parents' health and employment, concerns about students from lower socio-economic background being left behind are more than reasonable. Those concerns are largely confirmed by the current evidence, but some aspects of those inequities challenge some common expectations.

There is also good reason to believe that students who disengaged from their school learning came disproportionately from lower socio-economic backgrounds, but there is no direct information at this stage. Some factors for which we have information point to that direction. The availability of devices and access to internet connectivity affected more students from lower socio-economic backgrounds than others. There is clear evidence of this in the United States, where poor access to computers and connectivity disproportionately affected households headed by parents who were less educated, earned less income, or were Black or Latino. In addition, in the US, the pandemic disproportionately affected Black and Latino families, who were about twice as likely as White and Asian people to be hospitalised and/or die from Covid, which was likely to have an impact on the remote schooling of their (grand)children (US CDCP, 2021).<sup>9</sup>

In the countries covered, there is no evidence (yet) of family socio-economic status having an impact on the amount of time spent on schoolwork or the amount of time parents spent assisting children: children from all backgrounds seem to have devoted the same time to their schoolwork and have received the same amount of parental assistance. In fact, students from higher socio-economic status families sometimes received less support than those from lower status families. This may reflect the fact that parents in higher-status jobs had less time to support their children as they were more likely to have been working (rather than being on temporary layoff or unemployed) during lockdowns than adults with less education in lower-status occupations. It may be possible that the effectiveness of the assistance offered was dependent of the level of education of parents. Importantly, however, the interest in and willingness to provide support was equally distributed across households from all backgrounds.

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<sup>9</sup>According to the (governmental) US Center for Disease Control and Preventions, as of February 18, 2021, compared to White non-Hispanic persons, Black or African American and Hispanics or Latinos were 2.9 and 3.2-fold more likely to be hospitalised, respectively, and 1.9 and 2.3 more likely to die from Covid-19, respectively. Black or African American and Hispanics or Latinos were 1.1 and 1.3-fold more likely to get the virus. (American Indian or Alaska Natives are those who were the most likely to get the virus, get hospitalised, and die.) Risk for Covid-19 Infection, Hospitalization, and Death by Race/Ethnicity | CDC.

### ***15.6.3 In Summary***

The picture offered of the experiences and consequences in high-income countries of the period of school closures in this chapter is a relatively optimistic one. The lockdowns and associated closures of schools implemented in response to the arrival of the Covid-19 pandemic represented a sudden and unprecedented event for which school authorities, teachers, parents, and students were unprepared. Nevertheless, distance and remote education arrangements were put in place at short notice in emergency conditions. This allowed education to continue at home for most children, and a form of school-based education to be offered to children with special needs and the children of parents with no other care options, such as the children of ‘essential’ workers. While few would disagree that the distance/remote education arrangements put in place represented a less than perfect substitute for normal classes, they ensured that most, though not all, children continued to have a connection with teachers and their schools. For the most part, teachers, students, and parents adapted to the new arrangements. Most teachers continued to teach, and most students continued to learn. The fears of significant negative effects on student learning appear to not have been realised. While widening educational inequalities remains very plausible, they seem to have been limited in the high-income countries covered. Such a dramatic and sudden disruption to schooling arrangements can hardly be expected to have been without some impact on students’ learning, especially in the context of the arrival of a pandemic and the disruptive effect of lockdowns on every aspect of social and economic life. However, even if definitive conclusions cannot be drawn at this point, it appears likely that the negative consequences have been modest in scale and impact. For most children, missing 8–18 weeks of face-to-face schooling, even in a situation of lockdown, appears unlikely to have had dramatic consequences for either their academic or broader development, or led to the significant widening of pre-existing inequalities.

A few words of caution are necessary, however. The results presented in this chapter relate to a small number of high-income countries that experienced about 2–3 months of school closure during the first wave of the pandemic. The situation was and continues to be very different in middle- and low-income countries, where schools, in some cases, remained closed for long periods and the establishment of effective alternative delivery arrangements has been a considerable challenge. In those countries, socio-economic disparities are more marked and more likely to widen as time out of school increases.

### 15.6.4 Looking Ahead

Assuming some effects on student's learning, an important question is whether students affected will be able to 'catch up' on or consolidate any gaps in their learning resulting from the disruption to their schooling during the period of school closures. The scale of any on-going impact of the disruption to students' education caused by school closures on their academic performance and progress will be related to, among other things, (1) the relevance of what has been missed for their subsequent educational progress, (2) the opportunities they have and support they are given to catch-up on any learning 'gaps' resulting from reduced instruction and learning during school closures, and (3) the evolution of the Covid-19 pandemic.

Regarding the former, for many students failing to cover some elements of the curriculum in some subjects may not matter for their subsequent progress (or, *a fortiori*, for their "human capital" when they enter the labour market). By no means all the content covered in a subject in one year is a necessary pre-requisite for subsequent progress in either the subject area directly concerned or related areas.

In terms of the opportunities for catch-up, consolidation of the gaps in students' education due to the disruption flowing from school closures was high on the agendas of most governments and school authorities at the start of the 2020–21 school year. OECD (2021, Table 3.3) reports that around three-quarters of the countries for which data is available implemented 'remedial measures to reduce learning gaps' when schools reopened after the first period of closures.<sup>10</sup> In France for example, the priorities for the new school year included support for students to consolidate the aspects of their programmes that they did not cover due to confinement.<sup>11</sup> In the UK, the government introduced a Coronavirus catch-up premium and a national tutoring programme to support students and young people affected by the disruption of their education.<sup>12</sup> Even in the absence of specific programmes, it is likely that teachers will adjust their instruction to compensate for what was missed by students. Many parents will make efforts to ensure that their children catch up, as may the students themselves (especially those in senior high school). This is likely to be true regardless of their socio-economic status (although their effectiveness in reaching their goals may vary).

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<sup>10</sup>See also UNESCO, UNICEF, and the World Bank (2020, p. 19).

<sup>11</sup>As an example: « Au lycée, la rentrée 2020 se place sous le signe de l'identification des besoins propres à chaque élève et des réponses personnalisées qui peuvent y être apportées, avec pour objectif de résorber les écarts qui ont pu naître pendant la crise sanitaire». ("In senior high schools, the start of the 2020 school year has as its focus the identification of the individual needs of each student and the personalised support that can be offered to overcome the gaps in learning that may have developed during the health crisis"). <https://eduscol.education.fr/cid152895/rentree-2020-priorites-et-positionnement.html>.

<sup>12</sup><https://www.gov.uk/guidance/coronavirus-covid-19-catch-up-premium>.

The evolution of the Covid-19 pandemic represents something of a wild card. At the start of 2021, the school closures of March-June/July 2020 can be seen as the first phase of a period of on-going disruption to school education that appears set to continue until the middle of 2021. Schools reopened in most high-income countries towards the end of the 2019–20 school year, at the start of the 2020–21 year in the northern hemisphere or mid-year in the southern hemisphere. An exception is the Americas, where schools have remained either closed in some countries or opened unevenly due to the decentralised nature of the education governance. However, even where schools reopened, children’s education continued to be affected by the implementation of strict sanitary protocols, the closure of classes and individual schools due to cases of Covid-19 among students and staff, and the introduction of ‘hybrid’ forms of schooling alternating face-to-face and on-line delivery of lessons, as well as further episodes of school closures at regional or national level in some countries. This continuing disruption has the potential not only to complicate the consolidation of previous learning gaps, but also lead to additional learning gaps. Given the relatively low level of continuing disruption in most countries, and the fact that school systems will have learnt from the experience of the spring 2020 school closures (see e.g., NSW Department of Education, 2020), it can be hoped that the consolidation of learning will not be overly affected. However, the possibility that the evolution of the Covid-19 pandemic has more surprises in store cannot be ruled out.

This leads to the issue of data and the long-term monitoring of the consequences of the pandemic (not only the period of school closures in spring 2020) on children’s schooling. Surprisingly, few high-quality data collections were put in place during the period of school closures. This has restricted the capacity of researchers and others to have a good understanding of what occurred during this period, and of the behaviour and views of those involved and affected by closures and the disruption to school education. In this respect, it is important that school systems and Ministries of Education make publicly available as much of the administrative and other data regarding this period as they can, as well as facilitate access to relevant documentation about policies and administrative decisions. Access to data from standardised tests is particularly important, not only from those that took place in 2020 and earlier years but, equally importantly, those that will take place over the coming years.

## **Appendix A**

See Table 15.9.

## **Appendix B**

See Table 15.10.

**Table 15.9** Main data sources

Country	Study name	Sponsor	Target population(s)	Data collection dates	Documentation on methods
Australia	Household Impacts of COVID-19 Survey	Australian Bureau of Statistics	Adults aged 18 years and older resident in private dwellings	Bi-monthly from April-June 2020 then monthly	<a href="https://www.abs.gov.au/methodologies/household-impacts-covid-19-survey-methodology/12-15-may-2020">https://www.abs.gov.au/methodologies/household-impacts-covid-19-survey-methodology/12-15-may-2020</a>
France	Continuité pédagogique - période de mars à mai 2020 - enquêtes de la DEPP auprès des familles et des personnels de l'Éducation nationale	Ministère de l'Éducation nationale, de la Jeunesse et des Sports, Direction de l'évaluation, de la prospective et de la performance (DEPP)	(a) secondary students in public and private schools and their parents (b) primary and secondary school teachers in public and private schools (c) School principals	May-June 2020	<a href="https://www.education.gouv.fr/continuite-pedagogique-periode-de-mars-mai-2020-enquetes-de-la-depp-aupres-des-familles-et-des-305262">https://www.education.gouv.fr/continuite-pedagogique-periode-de-mars-mai-2020-enquetes-de-la-depp-aupres-des-familles-et-des-305262</a>
Ireland	Social Impact of COVID-19 Survey, August 2020: The Reopening of Schools	Central Statistical Office	Adults aged 15 years and over resident in private dwellings	13-19 August 2020	<a href="https://www.cso.ie/en/releasesandpublications/ep/p-sic19ros/socialimpactofcovid-19surveyaugust2020thereopeningofschools/backgroundnotes/">https://www.cso.ie/en/releasesandpublications/ep/p-sic19ros/socialimpactofcovid-19surveyaugust2020thereopeningofschools/backgroundnotes/</a>

(continued)



Table 15.9 (continued)

Country	Study name	Sponsor	Target population(s)	Data collection dates	Documentation on methods
United Kingdom	Opinions and Lifestyle Survey (Covid-19 module)	National Office of Statistics	Adults aged 16 years and over resident in private dwellings	Weekly from 20 March 2020	<a href="https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/methodologies/opinionsandlifeexpectancyqmi">https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/methodologies/opinionsandlifeexpectancyqmi</a>
	Understanding Society Covid-19 Survey	Institute for Social and Economic Research, University of Essex	All members aged 16 years and older, as of April 2020, of the main Understanding Society samples <sup>1</sup>	6 waves: April, May, June, July, September, and November 2020	<a href="https://www.understanding.society.ac.uk/documentation/covid-19">https://www.understanding.society.ac.uk/documentation/covid-19</a>
United States	Household Pulse Survey	US Census Bureau	Adults aged 15 years and over resident in private dwellings	Phase 1 – weekly from 23 April to 21 July, 2020	<a href="https://www.census.gov/programs-surveys/household-pulse-survey/technical-documentation.html">https://www.census.gov/programs-surveys/household-pulse-survey/technical-documentation.html</a>
	Gallup Panel	Gallup	Parents of children under the age of 18 and who are members of the Gallup Panel <sup>2</sup>	March-June 2020	<a href="https://news.gallup.com/poll/306140/amid-school-closures-children-feeling-happiness-boredom.aspx">https://news.gallup.com/poll/306140/amid-school-closures-children-feeling-happiness-boredom.aspx</a>

(continued)

Table 15.9 (continued)

Country	Study name	Sponsor	Target population(s)	Data collection dates	Documentation on methods
	Gallup Panel	NewSchools Venture fund/Gallup	(a) Parents of children under the age of 18 and who are members of the Gallup Panel <sup>2</sup> (b) Children in grades 3–12 of consenting panel members	22 July–5 August, 2020	<a href="https://news.gallup.com/opinion/gallup/317957/parents-students-thoughts-support-needed-fall.aspx">https://news.gallup.com/opinion/gallup/317957/parents-students-thoughts-support-needed-fall.aspx</a>
	American Trends Panel	Pew Research Centre	Adults - members of the American Trends Panel <sup>2</sup>	7–12 April 2020	<a href="https://www.pewresearch.org/internet/2020/04/30/covid-internet-methodology/">https://www.pewresearch.org/internet/2020/04/30/covid-internet-methodology/</a>
	American Educator Panel	RAND Education and Labor	K–12 public school teachers and principals <sup>3</sup>	27 April–11 May 2020	<a href="https://www.rand.org/pubs/research_reports/RR168-1.html">https://www.rand.org/pubs/research_reports/RR168-1.html</a>

*Notes*

(1) The Understanding Society survey or the UK Household Longitudinal Study (UKHLS) is a longitudinal study based on a representative sample of households in the UK. Respondents include all members of the sampled households aged 10 years or older

(2) Both the Gallup Panel and the American Trends Panel are nationally representative panels of randomly selected US adults

(3) The American Educator Panel is a nationally representative panel of public-school teachers and school principals in the US

**Table 15.10** Mode of delivery of lessons, learning resources, schoolwork during school closures – Czech Republic, France, Germany, United Kingdom, and the United States

Country	Mode of delivery of lessons, learning resources, schoolwork	% Of households or students	% Of teachers
<b>Czech Republic</b>	Involved in online communication with their school (primary – grades 1–5)	89	
	Involved in online communication with their school (primary – grades 1–9)	84	
	Involved in online communication with their school (upper secondary school, academic track)	96	
	Involved in online communication with their school (upper secondary school, vocational track)	< 80	
<b>France</b>	Often or always offering activities requiring a computer connected to the internet (primary)		67
	Often or always offering activities requiring a computer connected to the internet (lower secondary)		76–77
	Often or always offering activities requiring a computer connected to the internet (upper secondary)		84–85
	Received schoolwork via a digital workspace or other educational software (upper secondary)	95	
	Received schoolwork via e-mail or other discussion forums (upper secondary)	63	
	An online educational resource platform developed for use during the period of closures (upper secondary)	36	

(continued)

Table 15.10 (continued)

Country	Mode of delivery of lessons, learning resources, schoolwork	% Of households or students	% Of teachers
	Received schoolwork via transmission of paper documents (upper secondary)	11	
	Received schoolwork via transmission of documents (upper secondary) via telephone	11	
<b>Germany</b>	Teachers provided exercise sheets (primary and secondary)		84
	Teachers provided educational videos (primary and secondary)		39
	Teaching via video calls / conferences (primary and secondary)		14
	Learning resources are shared via e-mail (primary and secondary)		69
	Learning resources are shared via a digital (learning) platform (primary and secondary)		41
	Learning resources are shared in the form of hardcopies via post or pickup (primary and secondary)		33
<b>United Kingdom</b>			
	School provided real-time interactive online learning <sup>1</sup>	25	
	School provided digital resources accessed via online learning platforms <sup>1</sup>	69	
	School provided digital online learning resources <sup>1</sup>	53	
	School provided non-digital resources <sup>1</sup>	34	
	One or more online live lesson per day <sup>2</sup>	32	

(continued)

Table 15.10 (continued)

Country	Mode of delivery of lessons, learning resources, schoolwork	% Of households or students	% Of teachers
<b>United States</b>	Computer required for all school work <sup>2</sup>	49	
	Classes moved to distance format using online resources <sup>3</sup>	72–76	
	Classes moved to distance format using paper materials <sup>3</sup>	19–21	
	Materials are provided online <sup>4</sup>		76
	Materials are provided through a learning-management system <sup>4</sup>		83
	Materials are provided in hardcopy <sup>4</sup>		56

Sources Czech Republic: CSI (2020); France: Barhoumi et al. (2020), Figs. 2.6 and 3.1; Germany: Forsa (2020); UK: (1) ONS (2020), Table 2, (2) Benzval et al. (2020); US: (3) US Census Bureau (2020), Education Table 2, Waves 1–6; (4) Hamilton et al. (2020)

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**William Thorn** is a Senior Analyst in the Indicators and Analysis Division in the Education Directorate of the Organisation for Economic Cooperation and Development. He joined the OECD in July 2007 and currently manages the OECD's Programme for the International Assessment of Adult Competencies (PIAAC). Prior to joining the OECD, Mr Thorn held a wide range of senior positions in the Australian federal Departments of Education and Employment. This included the management of units responsible for research into education and the labour market, programme evaluation, statistical collections and analysis, tertiary education funding policy and the Commonwealth government's role in the testing and monitoring of basic skills such as literacy and numeracy in Australian schools

**Stéphan Vincent-Lancrin** is a Senior Analyst and Deputy Head of Division at the Organisation for Economic Co-operation and Development (Directorate for Education and Skills). He currently leads work on education during the Covid-19 crisis, but also leads OECD work on digitalization in education (*Digital Education Outlook: Pushing the Frontiers with AI, Blockchain and Robots*). His recent work focuses on innovation in education and educating for innovation. For example, *Fostering Students Creativity and Critical Thinking: What it Means in School* proposed a disciplined innovation and change management method based on practice-engaged research on the kind of support, environment and tools schoolteachers and university professors could be given to improve their teaching and their students' learning. Before joining the OECD, he has worked as lecturer and researcher in economics at the University of Paris-Nanterre and the London School of Economics.



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# Chapter 16

## The Unequal Impacts of COVID-19 on Student Learning



João Pedro Azevedo, Marcela Gutierrez, Rafael de Hoyos, and Jaime Saavedra

**Abstract** COVID-19 is not only leading to lower student learning levels, but likely resulting in a learning inequality catastrophe. In this chapter, we document the high-levels of learning inequality (within and between countries) that existed before the pandemic and disentangle the different mechanisms through which changes in inequality in learning may happen because of a shock like COVID-19, examining the role of school and family inputs. We show that historically, similar shocks in average learning levels disproportionately affect the most vulnerable students, and that emerging evidence from developed countries, as well as simulations, support the expected significant shifts in the learning distribution. Finally, we present a set of compensatory education policies that countries must urgently implement to reduce the impact of COVID-19 on learning inequality and promote equality of opportunities during and after the pandemic.

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J. P. Azevedo · M. Gutierrez (✉) · R. de Hoyos · J. Saavedra  
World Bank, Education Global Practice, 1818 H Street, NW Washington, DC, USA  
e-mail: [mgutierrezb@worldbankgroup.org](mailto:mgutierrezb@worldbankgroup.org)

J. P. Azevedo  
e-mail: [jazevedo@worldbank.org](mailto:jazevedo@worldbank.org)

R. de Hoyos  
e-mail: [rdehoyos@worldbank.org](mailto:rdehoyos@worldbank.org)

J. Saavedra  
e-mail: [jsaavedra@worldbank.org](mailto:jsaavedra@worldbank.org)

## 16.1 Introduction

The COVID-19 pandemic has generated the worst education crisis of the last century. The health pandemic, its subsequent massive and extended school closures, and the accompanying strain in public and family budgets (that result from one of the deepest global economic recessions in history) are unprecedented triple shocks to the human capital of a generation of children. If recovery strategies are not successfully designed and deployed, the intergenerational consequences of this pandemic will be felt for several generations to come.

By early 2021, almost a year after school closures started, World Bank simulations show that learning poverty—the percentage of children who cannot read and understand a simple text by age 10—could increase from 53 to 63% in low- and middle-income countries.<sup>1</sup> It is expected that about 24 million children and youth might not return to school or to a tertiary institution. In addition, there are mental health, nutritional and socialization losses stemming from the lack of interaction among school-aged children and long-term damaging effects over those young children who are still in early childhood.

But the impact of the crisis has been tremendously unequal both between and within countries. First, the timing of the school closures and the priority given to schools reopening at moments when the rates of infection of the pandemic receded, have been vastly different across countries. Second, the capacity of countries to respond with remote education options and its ability to maintain students engaged in the learning process has varied substantially. At the country level, most governments tried to cope with the shock by implementing multimodal remote learning strategies, relying in combinations of internet, TV, radio, and print. But the patterns of take-up of these strategies vary substantially, and its effectiveness remain to a large extent unknown. Poorer countries more frequently relied on radio and TV, while richer countries relied on online education and take-home packages of educational material. Third, household endowments that are important for the learning process and can complement school inputs during school closures are unevenly distributed. Some students have been able to engage with their teachers online, have connectivity, a space to study, books, and supportive parents at home. Others can at most access a few hours a week of radio or TV programming, or nothing at all. All this has generated extremely varied experiences along socioeconomic lines between and within countries.

The potential increase in inequality between countries and within them stemming from COVID-19 might not be surprising if we look at what has happened with inequality in learning in the recent past. Using PISA (Program in International Student Assessments) data, we report that when learning improves, it is usually a tide that raises all boats. However, when learning falls, reductions are not the same across the board but proportionally worse among those at the bottom. In other words, looking

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<sup>1</sup> Azevedo (2020).

at past experience when average learning falls (as will be the case with the COVID-19 slide), we can expect that low performing students will suffer disproportionately more.

In this chapter, we document and disentangle the different mechanisms through which changes in inequality in learning may happen because of a shock like COVID-19. In doing so, we answer the following questions: (i) what was the status of learning inequality before the pandemic, and how has learning inequality historically behaved in the face of similar shocks?; (ii) What are the causal linkages between COVID-19 and student learning outcomes?; (iii) What is the role played by pre-pandemic inequities in determining the impact of COVID-19 on learning inequality?; (iv) How are the remote education strategies implemented by governments around the world mediating the effects of COVID-19 on learning inequality?; and (v) What can governments do to reduce the impact of COVID-19 on learning inequality and promote equality of opportunities during and after the pandemic?

Section 16.2 shows pre-COVID-19 levels of learning inequality both between and within countries and describes how trends in average learning are associated with changes in learning dispersion. Section 16.3 develops a simple conceptual framework to both understand the current levels of learning inequality and how it might change because of the current pandemic. Section 16.4 uses the latest available data from government surveys and high frequency phone surveys to show how the COVID-19 pandemic and the ability of countries and families to mitigate and remediate the expected learning losses are likely to lead to significant shifts in learning inequality. Section 16.5 discusses the types of education policy options that can help mitigate and remediate the expected learning losses prioritizing disadvantaged students. The last section summarizes.

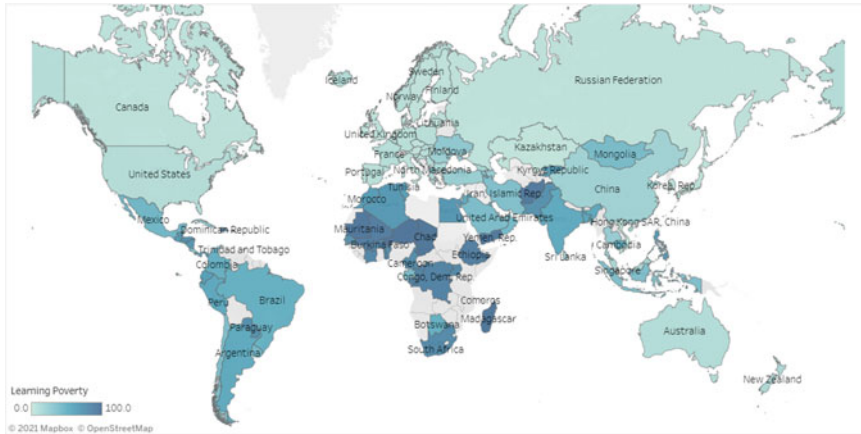
## 16.2 A Learning Crisis Characterized by Huge Disparities Between and Within Countries and Classrooms

Before COVID-19 hit, the world was facing a deep learning crisis with far too many children failing to acquire the basic skills of literacy and numeracy. In fact, 53% of children aged 10 did not know how to read and understand a simple text—what we refer to as learning poverty.<sup>2</sup> This high rate of learning poverty reflected the weakness of education systems worldwide; systems that have delivered improvements in schooling but were not adequately organized to equip children with the foundational skill of reading and hence unable to provide them with more complex skills in math, science, and the humanities. Further, this high rate of learning poverty constrains a country's human-capital accumulation, jeopardizing long-term productivity and growth.

The average learning poverty number hides immense variability in learning outcomes both between regions and countries, and within them. For instance, while

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<sup>2</sup> World Bank (2019), Azevedo et al. (2021b).

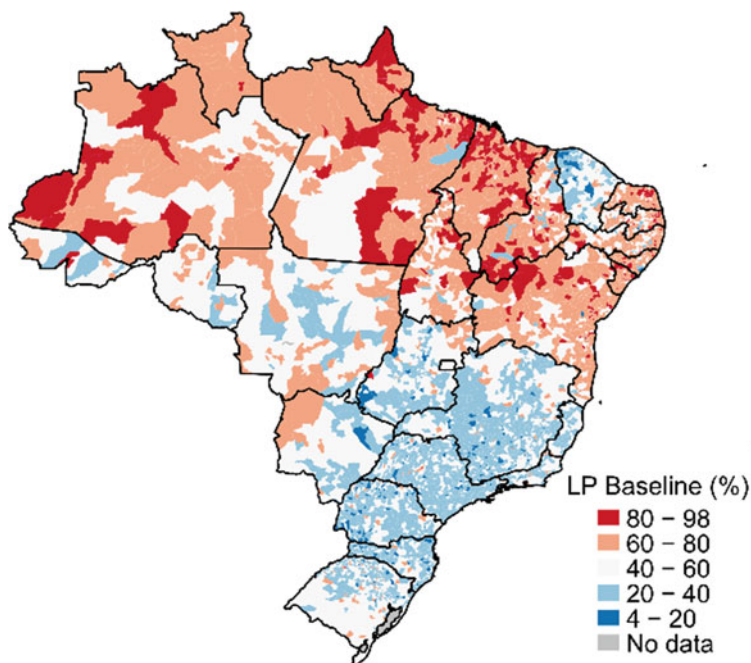


**Fig. 16.1** Between country differences in learning poverty. *Source* EduAnalytics; Learning Poverty database, The World Bank (October 2019)

learning poverty was 13% in Europe and Central Asia, it reached almost 80% of children in Sub-Saharan Africa. Even within Europe and Central Asia—the region with lowest learning poverty rates pre-pandemic—, results varied widely between countries: from 64% in the Kyrgyz Republic to less than 2% in the Netherlands (Fig. 16.1). Dramatic variations were also present within countries (Fig. 16.1). In Brazil, a country that had 48% of children in learning poverty, the within country spatial variation of learning poverty is striking, with rates ranging from the upper 80s in some North and North-Eastern municipalities, to lower 20s, in municipalities in the state of Ceará,—which is also in the northeast—, or in Sao Paulo (Fig. 16.2).<sup>3</sup>

Children are different; they have different abilities, preferences, speeds of learning, characters. Even in a classroom with little dispersion in socio-economic conditions, there will be a significant heterogeneity in learning achievement. Teachers must deal with this learning heterogeneity, part of which might be explained by differences in socio-economic conditions, or innate ability. This can be illustrated by a series of between- and within-group learning inequality decompositions using data from international learning assessment such as PISA and TIMSS (Trends in International Mathematics and Science Study). Within countries, we observe significant inequalities across the income scale, between urban and rural populations, between girls and boys, and between students in public and private schools. In fact, rurality, gender, income levels, and school characteristics (school fixed effects) accounted for, on average, slightly more than half of the total inequality in learning as measured by

<sup>3</sup> The learning poverty number at the municipal level within Brazil is not comparable to the global learning poverty number. The municipal level estimations use the microdata from Prova Brasil 2017, INEP School Census 2017 and IBGE population estimates. The National Minimum Proficiency Level threshold used was 200 points in Portuguese. For more information on the learning results in Ceará see Loureiro and Cruz (2020) and Loureiro et al. (2020).

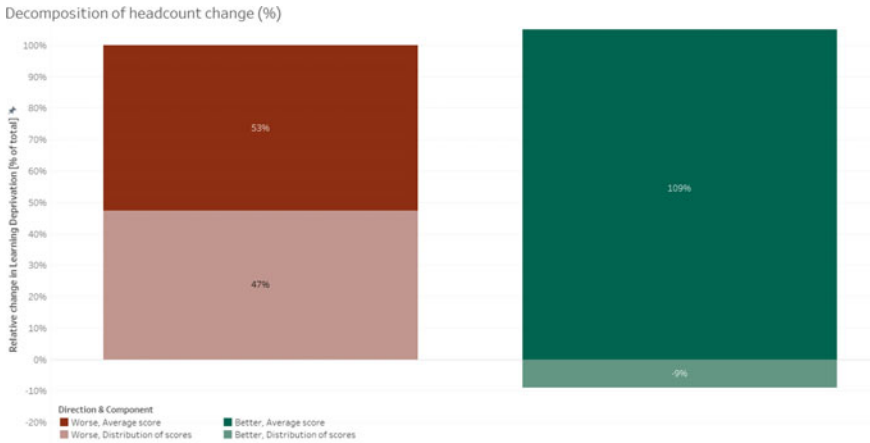


**Fig. 16.2** Within country differences in learning poverty. *Source* Azevedo and Goldemberg (2021). *Notes* The learning poverty number for Brazil is calculated at the municipal level, using the microdata from Prova Brasil 2017, INEP School Census 2017 and IBGE population estimates. The National Minimum Proficiency Level threshold used was 200 points in Portuguese

standardized tests.<sup>4</sup> It is important to note the significant heterogeneity of this result across regions and countries. While in East Asia, the Middle East, the Pacific, and Europe and Central Asia, this result varied from 30 to 70% of the total inequality. In other regions, such as Latin America, such characteristics help explain 50–70% of total inequality (see Fig. 16.13 for the range of results by regions).

Moreover, student experiences differ significantly within a country, reflecting preexisting inequalities in learning opportunities, which over time reinforce and exacerbate previous disparities. This potential increase in inequality within countries might not be surprising if we look at what has happened in the past when there have been system-wide changes in education performance. Historical data shows that when educational systems improves (i.e., higher share of students above a minimum proficiency level such as the SDG 4.1.1), it is usually a tide that raises all boats (see the green column of Fig. 16.3 which shows that when learning proficiency increased, changes in average scores were responsible for all progress). However, when the share of proficient students falls, reductions are not the same across the board but proportionally worse among those at the bottom of the learning distribution

<sup>4</sup> Azevedo and Goldemberg (2020a).



**Fig. 16.3** Contributions to changes in the share of learning deprived students of changes in the average score and changes in the distribution of learning. *Source* Azevedo and Goldemberg (2020a). *Note* Countries can attain progress in increasing the share of pupils reaching learning proficiency either by improving the outcomes of the average student and/or by focusing in improving the learning of those below the minimum proficiency level. The Figure contains a decomposition of the change in the share of students who score above the Minimum Proficiency level (400 points in the PISA scale) in reading using over 300 observations (each corresponding to a country and pair of years of participation in PISA). See Fig. 16.14 for results per country)

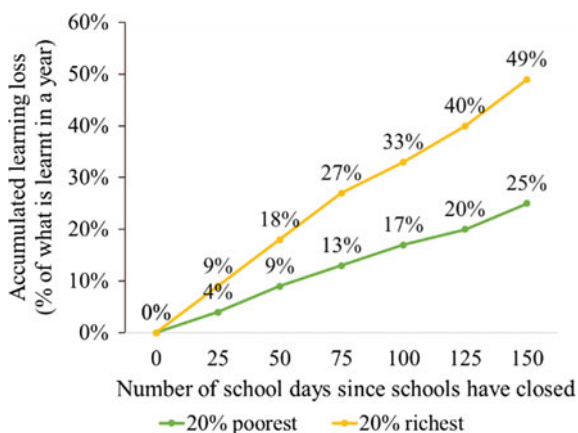
(see the red column of Fig. 16.3 which shows that when proficiency deteriorate, the changes in average scores and inequality each accounted for half of the worsening scores).<sup>5</sup> In other words, when learning declines, low performing students suffer disproportionately more.

COVID-19 seems to be one large episode in which the share of students above a minimum proficiency level will fall—as some early evidence already shows, as discussed below. Historical data suggests that such past episodes have not been distributionally neutral and have always disproportionately affected more students at the bottom of the learning distribution. Mitigating the impact of COVID-19 on learning disparities will call for the urgent design and implementation of specific compensatory education policies.

### 16.3 Why is Learning Unequal and How Might COVID-19 Magnify Such Inequality?

This section develops a conceptual framework through a simple description of the learning process, which can help explain pre-pandemic levels of learning inequality and how COVID-19 might have magnified them. Most of the discussion in this

<sup>5</sup> In the annex we show the country level data behind this calculation.



**Fig. 16.4** Projected accumulated learning loss for 5th grade students in Colombia- percentage of what is learnt in a year. *Source* Cerdán-Infantes et al. (2020)

section is based on the well-established relationships between human capital, student learning, and family and school inputs. The framework identifies the potential causal mechanisms explaining the heterogeneous shock of COVID-19 on student learning.

Initial empirical analysis, underpinned by a simple theoretical framework already shows that learning losses could be substantial and unequal, across countries and within countries. For example, country-level estimations in Latin America and the Caribbean, assuming 7-months of school closures, and learning loss mitigation measures with low effectiveness, show that children could lose up to 88% of what they would have learned in a regular school year, with those in the lowest income quintile losing up to 95%.<sup>6</sup> In another study, it is shown that if schools are closed for a whole school year in Chile, students from the lowest income quintile could lose up to 95% of their yearly learning while those in the highest income could lose up to 64%.<sup>7</sup> Simulations in Colombia show that even with partial school reopening, fifth-grade students' learning loss in the bottom quintile could double the top quintile's loss (Fig. 16.4).<sup>8</sup> Similar estimations hold for Costa Rica, where the poorest students stand to lose close to an additional year of schooling than the richest.<sup>9</sup> Outside of Latin America, simulations for Indonesia estimate that after four months of school closures, the difference in reading outcomes in PISA between secondary school students in the richest and the poorest quintile will increase from 1.4 years of schooling to 1.6 years of schooling (Fig. 16.5).<sup>10</sup>

Using similar simulations, another World Bank study shows large differences in learning losses across regions. In the scenario of 7 months closures, no remediation

<sup>6</sup> World Bank (forthcoming).

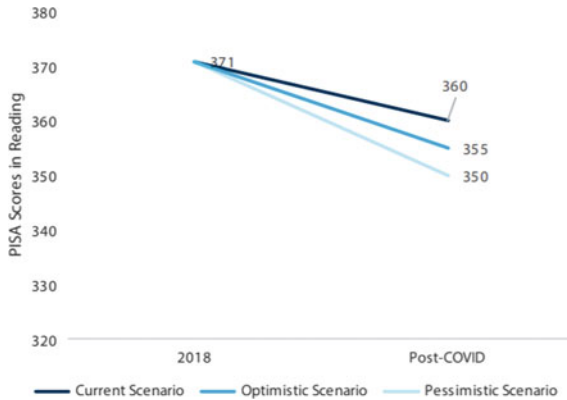
<sup>7</sup> Ministerio de Educación de Chile, Centro de Estudios (2020).

<sup>8</sup> Cerdán-Infantes et al. (2020).

<sup>9</sup> Fernández Aráuz (2020).

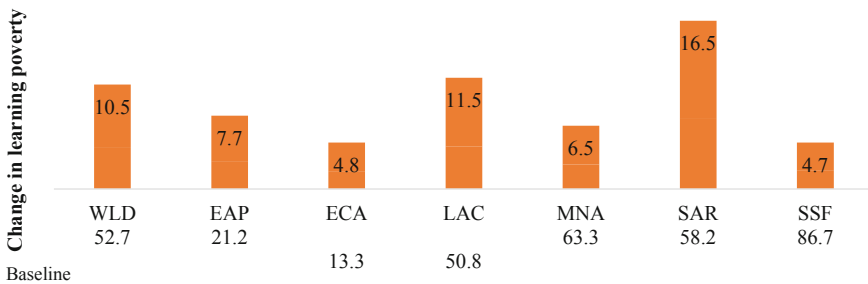
<sup>10</sup> Yarrow et al. (2020).





**Fig. 16.5** Projected trends in PISA scores in Indonesia under current (4 months), optimistic (6 months) and pessimistic (8 months) scenarios of school closures. *Source* Yarrow et al. (2020)

and very low mitigation effectiveness in low- and middle-income countries, learning poverty increases by 10 percentage points globally, from 53 to 63% (Fig. 16.6). Sub-Saharan Africa and Europe and Central Asia have the smallest absolute increase of learning poverty (5 percentage points), while South Asia has the largest (17 percentage points), followed by Latin America (12 percentage points). Sub-Saharan Africa also has the smallest relative increase (5 percentage points), while East Asia and the Pacific and Europe and Central Asia have the largest (more than 30 percentage points), suggesting that children in upper-middle-income and lower-middle-income countries are likely to become the new learning poor.



**Fig. 16.6** Learning poverty simulation results. *Source* All underlying numbers can be found in annex Table A.1 in Azevedo (2020) under the pessimistic scenario. *Note* Simulations for low- and middle-income countries only

### 16.3.1 The Technology of Skills Formation<sup>11</sup>

The stock of human capital or skills, knowledge, and experience of an individual is the outcome of a complex, dynamic, cumulative process involving innate ability and personality traits such as grit and motivation, and parental investment decisions. Schooling is one of the most important parental investment decisions determining student learning ( $T$ ) and therefore the stock of human capital of individuals. Parents can invest in schooling by paying for the opportunity cost of children not working, investing directly in private schooling, choosing a neighborhood partly based on the quality of public schooling available or making other efforts to enroll their children in a better school. Parental investments also determine the availability of household assets conducive to learning such as learning material, a good learning environment and access to technology. Learning outcomes of student “ $i$ ” at age “ $a$ ” are determined by his or her innate and immutable ability ( $\mu_i$ ), and the flow of past parental investments in the form of family and school inputs,  $F_i(a)$  and  $S_i(a)$ , respectively<sup>12</sup>:

$$T_{i,a} = T_a(F_i(a), S_i(a), \mu_i) \quad (16.1)$$

Family and school inputs in Eq. (16.1) have a positive effect on learning outcomes ( $\partial T_i / \partial F_i, \partial T_i / \partial S_i > 0$ ) and  $F_i(a)$  and  $S_i(a)$  are complements in the production of learning ( $\partial^2 T_i / \partial F_i \partial S_i > 0$ ). These properties of the learning production function have important implications for learning inequality and therefore the distribution of future well-being. Children from better-off parents also enjoy more family inputs at home such as books, technological devices, and most importantly, educated parents creating a positive covariance between family and school inputs. Additionally, rich parents can afford housing in a neighborhood with a high-quality public school or can pay for private schooling with qualified teachers, learning materials, and motivated and committed school directors. The concentration of family and school inputs in better-off households defines the distribution of student learning. Applying  $D\{\cdot\}$ , a dispersion or distribution operator, to Eq. (16.1):

$$D\{T_i\} = T'(D\{F_i\}, D\{S_i\}, D\{\mu_i\}) \quad (16.2)$$

The distribution of student learning is defined in terms of the distribution of past flows of family and school inputs, innate abilities, and a covariance between the three terms. Therefore, learning inequality in a point in time, is the outcome of the distribution of past and present family and school inputs,  $D\{F_i\}, D\{S_i\}$ . Alternatively, if the population of interest is divided into  $K$ -mutually exclusive population subgroups,  $D\{T_i\}$  can also be expressed in terms of differences in average inputs across the subgroups,  $\bar{F}(k), \bar{S}(k), \bar{\mu}(k)$ , and the dispersion of inputs within the subgroups,

<sup>11</sup> For a formal discussion on skills formation see Cunha and Heckman (2007).

<sup>12</sup>  $T_{i,a}$  is determined by  $T_{i,(a-1)}$  plus the parental investment at age “ $a$ ” in the form of family and school inputs,  $F_i(a)$  and  $S_i(a)$ . Substituting the parental investments in the flow of past student learning outcomes results in Eq. (16.1).

$D\{F_i(k)\}$ ,  $D\{S_i(k)\}$ ,  $D\{\mu_i(k)\}$ . For instance, inequality in student learning around the world can be expressed in terms of differences in the average level of inputs between countries and how these inputs are distributed within them.

Expression (16.2) is also useful to identify the potential contribution of public policy in shaping learning disparities. In the absence of interventions, the simple human capital accumulation process developed here leads to a society with high learning inequality. More equitable equilibriums require interventions to improve the availability of family inputs among disadvantaged groups via social protection policies or the enactment of education policies to enhance inputs—teachers, management, learning materials—in schools serving disadvantaged students. Cash transfer programs can increase income levels, strengthen nutrition, and even improve parenting through training, all of which can have a positive effect on student learning of vulnerable groups.<sup>13</sup> Other interventions might improve learning conditions at home by distributing books, computers or other materials to children’s households, providing parental training on how to stimulate children and encourage learning at home, and compensate the large inequality in home environments conducive to learning. A more direct and effective way to improving learning outcomes among disadvantaged students is to expand the availability and quality of inputs in schools serving this marginalized groups. Having a physical space dedicated to teaching and learning with an adequate environment and pedagogical materials, and with professionals trained to teach and mentor students, has proven to be a very effective way to improve learning and provide opportunities to poor and disadvantaged students.<sup>14</sup> In many cases, this equalizing social space disappeared.

### **16.3.2 COVID-19, Student Learning and Learning Inequality<sup>15</sup>**

Our simple framework of skills formation helps identify the impact of COVID-19 on student learning, which operates through the pandemic’s impact on family, school inputs, and government response. All these effects are mediated by the initial distribution of inputs and innate abilities such as perseverance and self-control. In other words, the pandemic can affect the distribution of student learning through three main channels: (1) shifting school inputs, through the choice of the duration and nature of schools closures; (2) the scale and effectiveness of public policies put in place by governments and private providers to mitigate and remediate these schools closures; and (3) the initial family distribution of endowments that can complement

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<sup>13</sup> There is some evidence showing that well-targeted conditional cash transfer programs have positive, though small, effects on student learning.

<sup>14</sup> Banerjee and Duflo (2011).

<sup>15</sup> For a rigorous theoretical discussion on the impact of COVID-19 on learning inequality see Agostinelli (2020).

school inputs which will become particularly important as learning moves to the home.

According to the World Bank (2021), the world economy was expected to decrease by 5% during 2020—the worse decline since the Great Depression—with many jobs lost, wages cut, and an immediate drop in households' well-being. This macro shock reduced the availability of family inputs,  $F_i(a)$ , which in turn could have reduced students learning outcomes in the short- and long-run. Family inputs are particularly important for the physical and social development of small children going through a critical developmental period.<sup>16</sup> The average economic shock of the pandemic hides important distributional impacts with households in the lower part of the income distribution bearing a larger share of the burden.<sup>17</sup> This is partly explained by the unequal possibility across individuals to work from home, which, in turn, is related to differences in occupations and availability of a computer with internet connection at home. Occupations intensive in the use of technology, usually paired with high levels of education, had an easier transition to home-based work. However, less than a third of household heads in developing countries had an occupation that lent itself to be performed through home-based work<sup>18</sup> and this share is significantly smaller once the availability of internet at home is accounted for.<sup>19,20</sup>

A more evident link between COVID-19 and student learning is through its effects on school inputs,  $S_i(a)$ . Many countries shut down schools to try to reduce the spread of the virus. Education systems had to struggle to use the available resources to continue the learning process, most of them relying on multiple platforms for remote learning, including the use of the internet, mobile phones, T.V., radio, and social media. Given that school inputs were not meant to be used in a context of school closures, lockdowns resulted in a loss of efficiency and productivity, reducing student learning almost immediately. There is plenty of evidence, prior to the COVID-19 pandemic, documenting the negative effects of school closures on student learning. Studies exploiting the “summer meltdown,” variations in the number of school days due to teachers' strikes, or extreme climate conditions, show that fewer school days reduce student learning outcomes in core subject areas like math and language.<sup>21</sup>

COVID-19 has also significantly impacted governments' fiscal space, affecting the availability and distribution of funding for the education sector, and the ability of countries to deploy public policies to prevent the worsening of the learning distributions. Before the pandemic, governments were spending vastly different amounts on

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<sup>16</sup> A recent paper analyzing the effects of the 2005 earthquake in Pakistan, which resulted in schools being closed for several months, shows that children between 0 and 3 years of age at the time of the quake show lower learning outcomes even 4 years after the shock (Andrabi et al., 2021).

<sup>17</sup> Bottan et al. (2020).

<sup>18</sup> Dingel and Neiman (2020).

<sup>19</sup> Garrote Sánchez et al. (2020).

<sup>20</sup> Additionally, a significant share of urban households with pre-pandemic incomes under the poverty line derived incomes from activities in the informal sector with little or no scope for working from home (Alfaro et al., 2020).

<sup>21</sup> See Azevedo et al. (2021a) for a discussion on the link between days of schooling and student learning.

education. In low-income countries, the pandemic is expected to reduce education spending in 2021.<sup>22</sup> Some countries are already cutting their education budgets to make space for the required spending on health and social protection. For example, in Ukraine, the education budget is set for a cut of around 4% or US\$217 million in 2020 to make more space to deal with COVID-19 related shocks. Reports from Nigeria also suggest that revisions to the federal budget will cut approximately 45% (US\$130 million) of the budget for the Universal Basic Education Commission. In Kenya, policymakers have identified both development spending on tertiary education and basic education curriculum reform as necessary cuts to support the country's COVID-19 response.

School closures, changes in education budgets and the education policies put in place by governments around the world had a large effect on learning disparities. While there was an overall loss in efficiency of school inputs, less well-off students were in a worse position to weather the storm. Affluent schools were better prepared for remote learning with a more intensive use of technology before the pandemic. With classrooms empty, good teachers and education technology depend on educated parents and availability of inputs (e.g., electricity, connectivity, internet, mobile phone, TV, radio, paper-based-assignments, and books) at home to reach students and produce learning. School closures together with remote learning strategies increased the complementary nature between family and school inputs, making unequal household conditions a more salient determinant of learning inequality.

In developing countries, most students do not have the minimum conditions to learn at home. For instance, in Mexico, an upper middle-income country, only half of the students in basic education—from preschool to 9th grade—had access to a technological device connected to the internet from home, with this share being less than 25% among students from poor households. Having a device with access to the internet provides students access to online learning and a vast amount of knowledge, but it is not enough to learn. For learning to happen while schools are closed, students, particularly young ones, need an adult (parent or caregiver) with enough time and schooling to teach, guide, and encourage them at home.<sup>23</sup> Differences in the schooling level and availability of time among parents or caregivers among poor and non-poor households is one of the most important sources behind the unequal effect of COVID-19 on student learning.

The combination of lack of access to a device with an internet connection, and parents with low education levels and working in the informal sector with little or no time to assist their children in the learning process, makes the impact of school closures highly regressive. The pandemic's regressive effect on family and school inputs combine and reinforce each other to have a significant interruption of the learning trajectories of poor and disadvantaged students. When governments decided to close schools, families changed their behavior to try to cushion the learning disruptions of this decision, but only well-off household had the resources to mitigate the

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<sup>22</sup> See Al-Samarrai et al. (2020) for a detailed discussion of the expected impacts of the COVID-19 pandemic on education financing.

<sup>23</sup> Banerjee et al. (2007), Bettinger et al. (2020), Escueta et al. (2020).

shock. Highly educated parents in better-off families with secure jobs in the formal sector devoted more time to their children's learning process or invested in private tutoring. Poor households did not have the means to adapt to the new circumstances, absorbing most of the learning shock. While shutting down schools, societies were also shutting down a great social leveler and perhaps one of the few feasible options to escape poverty.<sup>24</sup>

## 16.4 What the Data Shows: How Can COVID-19 Impact Learning Inequality?

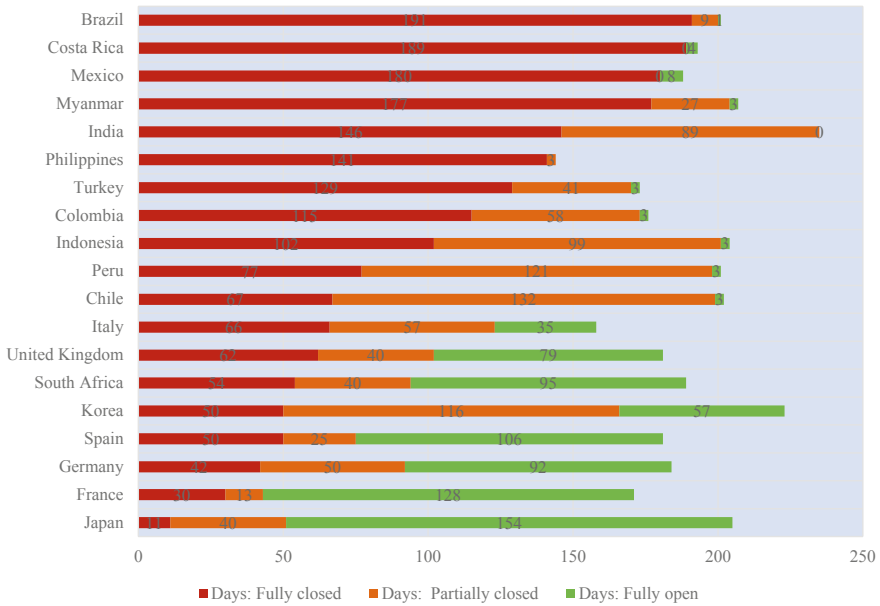
This section builds on the conceptual framework introduced in the previous section to provide initial systematic evidence on how the COVID-19 pandemic might impact learning inequality. This section is organized around three main guiding questions, namely: (i) How unequal have COVID-19 school closures been? (ii) How might the current ability of governments to respond to the pandemic affect COVID-19's impact on learning inequality? and (iii) How are pre-crisis inequalities likely to affect the ability of households to ensure learning continuity?

### 16.4.1 *How Unequal Have the COVID-19 School Closures Been?*

The COVID-19 shock did not affect all countries at the same point of the school year, and offered hugely different conditions for governments to plan, prepare and deploy their mitigation and remediation strategies. In some countries, mostly in the Northern Hemisphere, school closures disrupted the end of a school year; in others, school closures delayed the start of the school year; in still others, school closures coincided with a previously scheduled break. Government's decisions regarding the length of school closures have also varied substantially with some countries closing schools for close to a year now, while some closed them for less than 2 months (Fig. 16.7). Figure 16.7 plots the duration of school closures for a selection of countries chosen to underscore the variety of situations. However, it should be noted that even neighboring countries in the same region experienced vastly different durations and timing of school closure.

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<sup>24</sup> Glewwe et al. (2017) finds no evidence that schools in Vietnam are more effective for advantaged students. Indeed, the one significant effect is that girls, who some consider disadvantaged, pull ahead of boys between age 5 and 10. In contrast, for two definitions of disadvantage, schools in Peru appear to be more effective for advantaged students. Vietnam's expansion in primary education in the last 2 decades included effective investment in education quality and a focus on equity, emphasizing that all pupils attain "minimum standards." In contrast, Peru's schools suffer from low average quality and high inequality in student learning, with evidence of gaps in access and learning outcomes by, for example, income and ethnicity.



**Fig. 16.7** Number of days by school opening status from March 2020 to February 2021, selected countries

In addition, unequal impacts of COVID-19 across gender will also play a significant role in shaping the effect of the pandemic on learning inequality. With schools closed, young girls in low-income settings could spend more time looking after their younger siblings and engaging in other household chores leading to increased disengagement, less learning and eventually higher school dropout.<sup>25</sup> The rise in anxiety, stress, intra-household violence, and child abuse and neglect, often associated with economic insecurity, will have long-lasting negative impacts on student learning, particularly socio-emotional skills.<sup>26</sup>

There is little evidence regarding the impact of current school closures over learning. However, the mounting evidence—mostly from rich countries—points to relatively low and unequal effectiveness of remote learning. Evidence from a few European countries for which there is learning data post-school closures shows a significant loss of learning, with disadvantaged students suffering the most. In the Netherlands, Belgium, and Switzerland, despite almost universal access to online services, researchers found a decrease in student performance and growing inequality, likely due to children from better-off families receiving more parental support and having better remote learning environments.<sup>27</sup> In the U.S., regardless of the type of college, enrollment rates for low-income high school students plunged by 29% in

<sup>25</sup> Shores and Steinberg (2020).

<sup>26</sup> Griffith (2020), Bullinger et al. (2020a, b).

<sup>27</sup> Engzell et al. (2020), Bel (2020).

**Table 16.1** Impacts of COVID-19 over learning

Country	Result
Netherlands	After 8 weeks of lockdown, students experienced a learning loss of around 0.08 s.d. (3 pp) which is equivalent to a fifth of a school year (the same period that schools were closed). Losses were up to 60% larger among students from less-educated homes
United Kingdom	All groups experienced learning losses: in reading equivalent to 1.6 to 2 months, and in math equivalent to over three months. Learning loss is particularly salient in disadvantaged schools (2.2 months in schools with high rates of free school meal eligibility vs. 1.5 months in schools with low rates of free school meal eligibility)
Belgium	Significant learning loss with a decrease in math scores of 0.19 s.d. and Dutch scores of 0.29 s.d. Inequality within schools increased by 17% and 20% for math and for Dutch, respectively. Inequality between schools rose by 7% for math and 18% for Dutch. Learning losses are higher for schools with more disadvantaged students
Switzerland	After 8 weeks of school closures, primary school students learned more than twice as fast attending face-to-face learning than with remote learning, and disparities in learning between students increase substantially. In contrast, learning for secondary school students was not significantly increased

Source Engzell et al. (2020), Renaissance Learning, Education Policy Institute (2021), Maldonado and de Witte (2020), Tomasik et al. (2020)

Fall of 2020, a rate that is double that of students from higher-income high schools (Table 16.1).<sup>28</sup>

### ***16.4.2 How Might the Current Ability of Governments to Respond to the Pandemic Affect Its Impact on Learning Inequality?***

The government responses to these shocks have also been tremendously unequal. First, even if most countries responded to school closures by attempting different mechanisms of remote learning, the access and effectiveness of these efforts has varied widely. Low-income countries relied more frequently on one-way communication strategies, such as radio and TV, while high-income countries are using two-way communication strategies, such as online platforms, leveraged by take-home packages of educational material.

The difference in response, in terms of distance education mechanisms and length of school closures, points to very different experiences between countries, most likely generating a larger divergence in learning inequality between rich and poor countries.

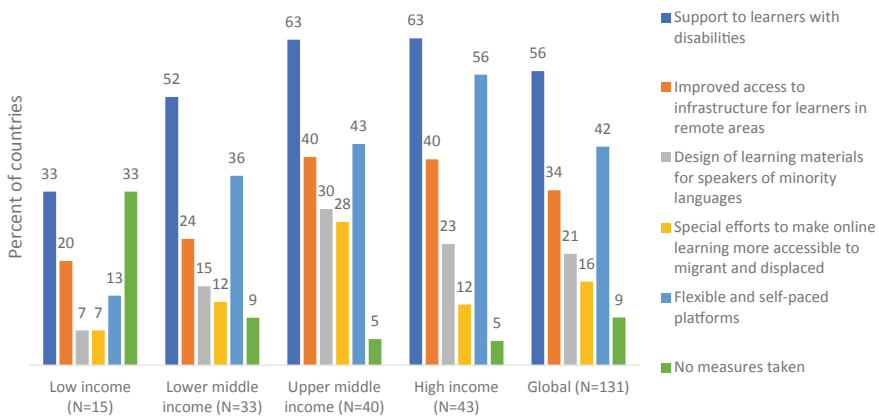
Additionally, within countries, different conditions in school and at home have led to dramatically different experiences for children. Suddenly, and faster than expected,

<sup>28</sup> Whitmire (2020).

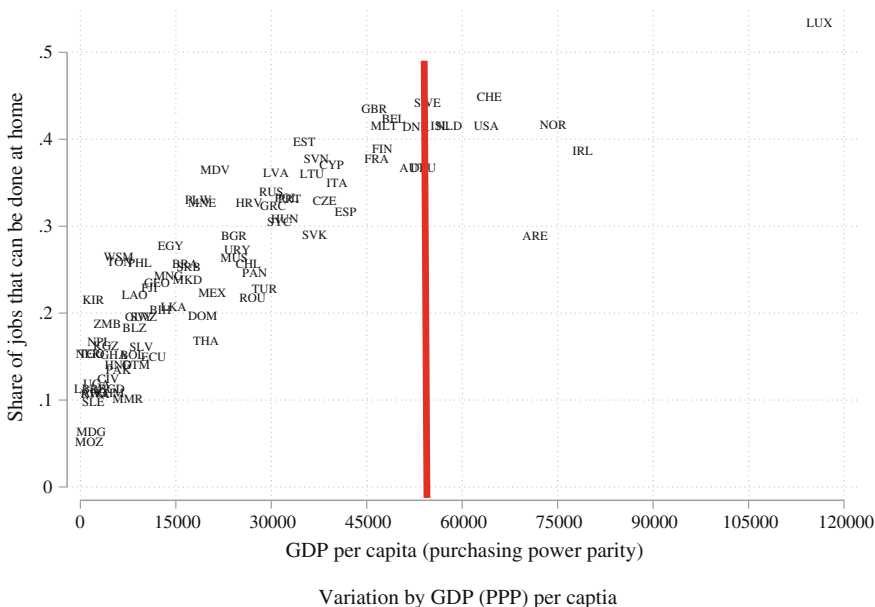


many teachers were required to become technology experts, digitally connecting with their students, and creating alternative learning routines using digital platforms. If their students had internet access and conditions to work at home, they were able to partially compensate for the lack of in-person classes. Other teachers, whose students only had access to a shared smartphone among different household members, had greater difficulties. These students could follow educational programming on television or radio, but with several siblings in a small house and little room to concentrate, in addition to no space to interact with teachers to ask questions, they had more difficulty learning. And many other students completely disengaged from the educational process. Some students—in countries as diverse as Indonesia, Kenya, and Colombia—were able to easily cope with the changes after schools closed, but not the majority. 2020 marks a different childhood experience that these young people will remember for the rest of their lives, one that will impact their skills and economic prospects for the rest of their lives.

A UNESCO-UNICEF-World Bank Joint survey of school closures applied in late 2020 asked Ministries of Education what policies were being put in place to prevent the exclusion of learners without access to remote learning. As mentioned above, most countries implemented multiplatform strategies, with very different patterns across countries. The differences between countries are striking. One third of low-income countries (33) have declared that they have not taken any measures to reduce the risk of students ‘exclusion from remote learning, a result that is six times higher compared to high-income countries (Fig. 16.8). High and middle-income countries were significantly more likely to roll out measures that would entail flexible and self-paced platforms. These platforms ranged from asynchronous learning platforms (which allow each learner greater flexibility and the freedom to advance at his or



**Fig. 16.8** Measures for students at risk of exclusion from remote learning, by country income group. *Source* Authors’ calculations using UNICEF/UNESCO/World Bank joint survey



**Fig. 16.9** Working from home and per capita GDP. *Source* Dingel and Neiman (2020)

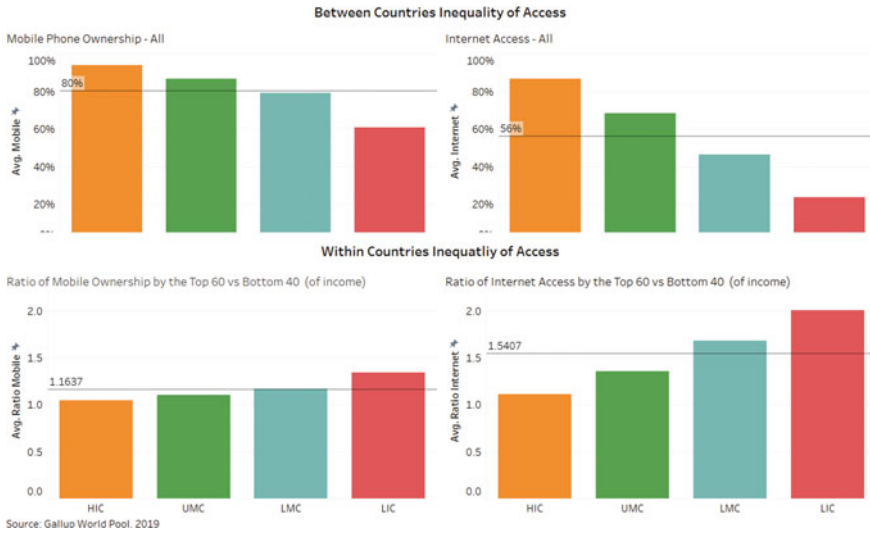
her own speed, thus integrating various learning habits), to using school facilities to support learners in need and those at risk of dropout and disengagement.<sup>29</sup>

### 16.4.3 How Are Families’ and Household’s Pre-COVID Inequalities and Post-COVID Behavior Likely to Magnify the Learning Crisis?

As described above, the economic shock that resulted from COVID-19 has been highly unequally distributed between and within countries, with households in the lower part of the income distribution bearing a larger share of the burden. The unequal distribution of the economic shock is partly explained by pre-pandemic differences in labor market conditions, with formal, high-skilled, occupations lending themselves to be performed at home and more precarious ones more exposed to lockdowns. As shown in Fig. 16.9, less than a third of households in developing countries—to the left of the vertical line in Fig. 16.9—had an occupation that lends itself to be performed through home-based work.<sup>30</sup> Additionally, a significant share of urban households

<sup>29</sup> UNESCO, UNICEF, The World Bank (2020b).

<sup>30</sup> Dingel and Neiman (2020).



**Fig. 16.10** Between and within country variation on ownership and access to mobile phones, by country income groups. *Source* Authors’ calculations using Gallup World Poll (2019)

with pre-pandemic incomes under the poverty line derived incomes from informal sector activities with little or no scope for working from home.<sup>31</sup>

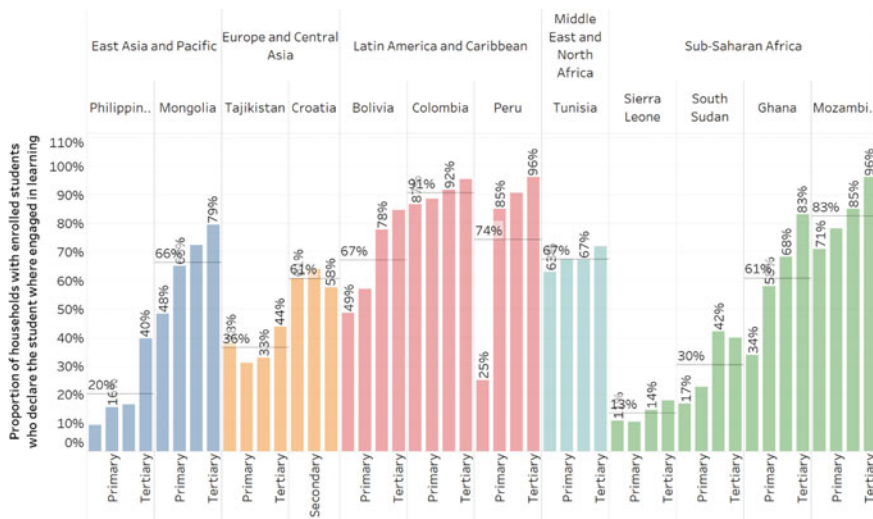
The occupational characteristics of individuals in poor households made them less adept to lockdowns, bearing a disproportional shock from the pandemic. Evidence from previous economic crises shows that student learning suffers from negative income shocks.<sup>32</sup> Parents have less time and resources to make sure that there are minimum household conditions for learning; in low-income settings, nutritional inputs can be compromised, or children might be encouraged to enter the labor market, all of which reduces student learning.

A second pre-pandemic inequality shaping the learning incidence of COVID-19 is the availability of devices with access to the internet. Figure 16.10 shows the highly unequal distribution of access to a mobile phone or internet between and within countries. Mobile ownership reaches 94% in high income countries, and only 61% in low-income countries. Internet access reaches 87% in rich countries but only 24% in poorer ones. Moreover, within countries inequality in access varies dramatically. In rich countries for example, access to internet does not differ much between the bottom 60% and the top 40% in the income scale. In low-income countries, access rates double among the top 40%.

Perhaps the most important element shaping the unequal learning impacts of the pandemic is the pre-existing differences in parental schooling. More educated parents were not only more adept to changes in labor market conditions, but they

<sup>31</sup> Alfaro et al. (2020).

<sup>32</sup> Shafiq (2010); Shores and Steinberg (2017).



**Fig. 16.11** Household learning engagement in the last 7 days, in selected countries by household's highest level of adult education. *Source* Authors' calculations using World Bank High-Frequency Phone Survey (2020). *Note* Survey responded at the household level. Responses reference 7 days. Latin American responses from Wave 1 were removed to avoid a different reference window

were also more likely to have the content knowledge to help their children during home schooling. Parents or caregivers with more education are also more aware of the importance that learning outcomes play in shaping their children's future labor market opportunities which encouraged them to actively participate in home schooling activities. Figure 16.11 shows the learning engagement level of students for countries in different regions by the highest level of education of adults in the household. Once again, both between- and within-group learning inequalities are likely to increase, as the level of learning engagement during the pandemic is drastically higher for children of highly educated parents. While more than 80% of students from households with a highly educated adult (tertiary education) have remained engaged in learning during the period of school closures, engagement is much lower in households with adults with lower education levels. In several countries, students from households where adults had no education were 3 to 4 times less likely to be engaged in a learning activity during the same period.

## 16.5 Education Policies to Mitigate and Remediate Learning Losses

As we saw in the previous sections, COVID-19 not only led to decreased learning but likely resulted in a learning inequality catastrophe. Countries urgently need to implement compensatory measures to avoid turning the temporary shock into a permanent one. Some of these measures can be implemented once schools re-open, while others need to be implemented as soon as possible, complementing remote learning interventions. Certainly, all the compensatory policies need a careful design, training for those responsible for implementing them on the ground, a rollout strategy, and above all, the necessary financial resources and political leadership.

In the short-term, a critical task of education systems is to avoid that the potential impacts of COVID-19 described above transform into student disengagement and an eventual school dropout. Therefore, compensatory education policies should identify and reach out to students suffering the most and keep them engaged to ensure that they return to school once re-open. As shown in Fig. 16.12, strategies to encourage reenrollment include information and communication campaigns, financial and non-financial incentives, early warning systems with targeted support interventions, and special education programs for pregnant girls when banned from school.

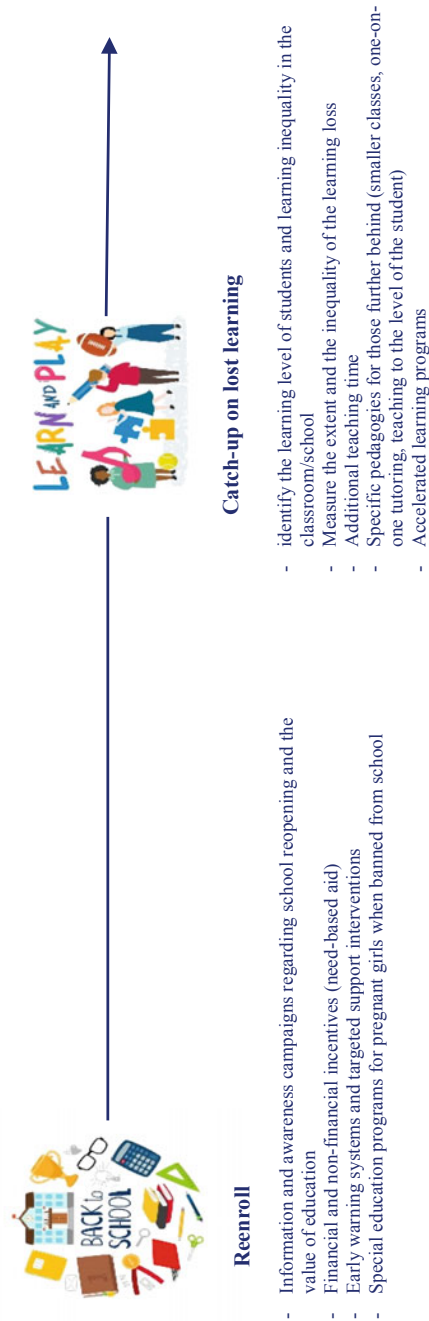
Once schools re-open, at least in a hybrid way, the focus should be on compensating learning losses and providing more support for those students that suffered the most from the pandemic. To help those with the biggest learning gaps catch-up, countries can measure the extent and the incidence of the learning loss and implement compensatory education policies including additional teaching time, specific pedagogies targeted at those furthest behinds (such as teaching to the right level methodologies), tutoring or accelerated learning programs (see Fig. 16.12).<sup>33</sup>

Given fiscal and operational limitations, it is important to ensure that resources are allocated efficiently. One option is for Ministries of Education to implement a combination of system-wide responses to address the generalized learning loss at a national level (such as streamlining the curriculum)<sup>34</sup> and more targeted strategies (such as tutoring and teaching to the right level) to tackle the inequality of the learning loss. For the targeted strategies, Ministries could consider allocating resources and technical assistance to schools based on their share of disadvantaged students. In low-capacity contexts, it might be necessary to provide direct support to schools to implement the compensatory measures, with the support of NGOs (non-governmental organizations) or volunteers. In contexts where the school and regional levels have the necessary capacity, Ministries could consider creating a menu of compensatory options and transferring funds to schools or districts to select the compensatory measures that might work best for their student population. The selection of context-adequate compensatory options could be done with the technical guidance of central-level

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<sup>33</sup> Mundy and Hares (2020).

<sup>34</sup> For instance, France will provide teachers with guides explaining the prioritized objectives for the grade once schools open in the fall.



**Fig. 16.12** Compensatory measures to reduce learning inequality upon re-opening

education authorities. The remaining elements of this section describe some education interventions for which there is some evidence showing that they effectively increase student reenrollment and, once in school, improve learning.

### ***16.5.1 Compensatory Measures to Increase Reenrollment***

To avoid disengagement with the learning process and increase reenrollment, policy-makers can consider providing information to students and parents on the availability of distance education programs, school re-opening plans, school safety protocols, and income-earning benefits of education. In their most basic form, information and awareness campaigns can inform parents of the available distance or hybrid education programs, school re-opening plans (e.g., dates, location), and the process to get children back to school.<sup>35</sup> To tackle the fear of contagion while in schools, campaigns can also involve messaging regarding school safety protocols and on showing the evidence of low transmission of COVID-19 for the youngest. Importantly, including specific and context-relevant information on the returns to education might be useful in increasing enrollment (and attainment) in contexts where that information shifts the beliefs of youth and parents (for instance, where youth have limited exposure to highly educated individuals in their communities that are successful in the labor market).<sup>36</sup> The latter has been tested positively in small-scale interventions in Madagascar, Peru, and the Dominican Republic.<sup>37</sup>

The provision of information cannot wait for schools to re-open; communications must be continuous so that the linkage between the student and the school stays active and disengagement is averted. For instance, an RCT (randomized clinical trial) in Pakistan is evaluating the effect of an intervention that includes lesson plans, SMS (Short Messaging Services), and phone messages to encourage take-up of distance education; as well as SMS with information on school re-opening plans, school scholarships, the returns of learning, and other social returns to encourage re-enrollment.<sup>38</sup> Re-enrollment campaigns are also being implemented in Madagascar, Ethiopia, Pakistan, and Sierra Leone, focusing on students most at risk of dropping out (girls and students from marginalized communities). The Philippines is implementing a multi-pronged strategy to bring children back to school, which involves more flexible enrollment procedures, teachers tracking each student's enrollment, and a strong media campaign (involving Facebook, Twitter, local T.V., and radio).<sup>39</sup>

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<sup>35</sup> Ludvigsson (2020), Munro and Faust (2020), Dattner et al. (2020), Rajmil (2020), Heavey et al. (2020), Isaacs et al. (2020).

<sup>36</sup> Global Education Advisory Panel (2020), Adelman and Székely (2017).

<sup>37</sup> Nguyen (2008), Neilson et al. (2016), Jensen (2010).

<sup>38</sup> SIEF (2020).

<sup>39</sup> The flexible procedures include accepting enrollments after the start of the school year, extending deadlines for documentation to enroll, and creating new spaces for enrollment to take place. UNESCO (2020a).

Early-warning systems (EWS) could be used to identify children and youth at risk of disengaging with learning and not returning to school and providing them targeted support. EWS uses data on risk factors that contribute to dropout (e.g., attendance, academic achievement) to identify students at risk and provide them with interventions to help them stay in school. These interventions can include SMS/calls to encourage children to participate in distance learning, provide them with distance learning materials, and notify parents when children do not engage or do not reenroll; virtual (online, phone, SMS) one-on-one support from teachers or volunteers; extra-curricular activities; mentoring schemes; remediation classes; psychosocial support; counseling; or even monetary and non-monetary incentives. EWS is most effective in countries where there is sufficient student data, where dropout is not widespread, and where schools can support students that are identified as at risk.<sup>40</sup> In fact, while they have reduced absenteeism in the USA (United States of America), in the Netherlands, in Cambodia, and in Serbia (albeit in a small-scale pilot), they have not been impactful in Tajikistan, India, and Timor-Leste.<sup>41</sup> To respond to COVID-19, Salvador (Brazil) is combining accelerated learning recovery programs with the system-wide expansion of an EWS where *Agentes da Educação* monitor school attendance and visit families of at-risk youth to prevent dropout.<sup>42</sup>

Although the impact has not yet been widely measured, multiple countries are using technology-enabled support to complement distance education delivery for the most vulnerable during COVID-19. In Italy, the provision of 3.6 weekly hours of free individual online tutoring by volunteer university students significantly impacted students' academic performance, socio-emotional skills, and psychological well-being. Importantly, the effects were greater for those of lower socio-economic backgrounds and immigrants.<sup>43</sup> In Botswana, weekly SMS with math problems and 15–20-min phone calls to walk through the problems significantly increased student learning during school closures.<sup>44</sup> Similar interventions are being tested in other countries. In Bangladesh, researchers are evaluating the effect of SMS messages, teacher outreach, and a reduction of internet cost over student engagement with the governments' distance learning platform, student learning, and socio-emotional wellbeing. In Ecuador, researchers evaluate the effect of sending SMS reminders to encourage students to complete their online training along with incentives (a weekly lottery ticket for a prize upon completing learning modules) and benchmarking for underperforming students. In Ghana, an RCT is testing the impact of sending SMS messages that suggest activities to promote socio-emotional development at home and encourage remote learning. In Guatemala, the impact of radio skits with early childhood stimulation messages and voice messages to encourage uptake is also being evaluated. Finally, the impact of SMS reminders to listen to the radio distance

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<sup>40</sup> UNICEF (2018).

<sup>41</sup> Faria et al. (2018), De Witte and Cabus (2010), Mathematica (2015), Jovanović et al. (2017), Early (2015), Mathematica (2015).

<sup>42</sup> World Bank (forthcoming).

<sup>43</sup> Carlana and La Ferrara (2021).

<sup>44</sup> Angrist et al. (2020).



program and a complimentary phone tutorial by teachers is being evaluated in Sierra Leone.<sup>45</sup>

When the reasons for not returning to schools are financial, it might be useful to offer incentives that offset the financial opportunity costs of returning and increase the immediate benefits of getting back to school. These incentives can be financial (such as awarding scholarships, fee waivers, or conditional cash transfers) or non-financial (such as free school meals or materials—e.g., books, uniforms, meals, transport, radios, tablets).<sup>46</sup> Properly targeted cash transfers have consistently shown positive effects on enrollment and dropout rates in contexts where school participation is low.<sup>47</sup> For them to be impactful, it is crucial to target children that might not continue schooling otherwise because of financial pressures or high opportunity costs outside school. Scholarships can be ineffective when not well-targeted or when the real constraint driving dropouts is academic rather financial.<sup>48</sup>

After the Ebola crisis, Sierra Leone drove re-enrollment rates to 95% by ensuring minimum safety protocols (soap, veronica buckets), using massive awareness campaigns (radio jingles, back-to-school committees with parents), training on the provision of psychosocial support, and waiving school fees including children's books. In response to COVID-19, multiple countries are providing similar incentives. For instance, UNICEF is working with Airtel Africa in 13 sub-Saharan African countries to provide mobile cash transfers to families of 133 million school-aged children encouraging reenrollment and online learning.<sup>49</sup>

Offering pregnant girls special education programs can also be critical to increase engagement with schooling and re-enrollment, especially in countries with a ban on pregnant girls attending school. During the Ebola crisis of 2014, Sierra Leonean schools were closed for eight months. Upon re-opening, girls ages 12–17 were 16 percentage points less likely to be in school. Child labor by girls increased by 19 percentage points.<sup>50</sup> In some communities, teenage pregnancy increased by up to 65% due to the socio-economic conditions imposed by the outbreak.<sup>51</sup> During that time, the country had banned visibly pregnant girls from returning to schools or sitting for examinations. This led to a generation of young mothers that saw their future truncated. Thankfully, in March 2020, the government reversed this ban and implemented the Zero Schoolgirl Pregnancy Campaign that involves strong messaging to Chiefs, religious leaders, the police, nurses, parents, teachers, and girls themselves around the importance of protecting and investing in girls, enhancing sexual reproductive health education; reducing maternal teenage death to zero; enhancing school completion and transition, and supporting the health of girls.<sup>52</sup>

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<sup>45</sup> SIEF (2020).

<sup>46</sup> Adelman and Székely (2017).

<sup>47</sup> Global Education Advisory Panel (2020).

<sup>48</sup> de Hoyos et al. (2019).

<sup>49</sup> UNESCO (2020a).

<sup>50</sup> Bandiera et al. (2018).

<sup>51</sup> Onyango et al. (2019).

<sup>52</sup> Calimoutou (2020), Sierra Network (2020).

## 16.5.2 *Compensatory Measures to Catch up Lost Learning*

Countries must start by assessing student learning to understand how to best align their practices and teaching material to the students' needs. In countries where a sufficiently recent learning assessment is available, it should be possible to design a temporary comparable instrument and use it to measure the extent of the learning losses.<sup>53</sup> Countries need to understand both the extent of the learning loss and whether all students in each classroom/school/district/or country were impacted similarly. Countries do not have to wait until school re-opening to measure the current level of learning their students, and potentially their learning loss. For instance, the Ministry of Education and Technical Education of Egypt adapted their examinations so that students in grades 3–9 are evaluated through open-book multidisciplinary research projects done from home, and students in grades 10–11 rely on computer-based tests from home.<sup>54</sup> Ghana and Rwanda will also test remote formative assessments using basic mobile phone technologies to support learning outside of physical classrooms. France plans to follow a more traditional route by conducting early year assessments for grades 1, 6 and 12, and providing sample tests for teachers to assess student learning at a classroom level.<sup>55</sup>

Increasing the instructional time might be a way to catch up on lost learning during closures. This could entail having a greater number of hours each school day (through longer school days or shorter recess time), extending the school week (through weekend school), offering summer school, or having an early school start or late school end. The school day's expansion has shown consistently positive impacts on learning in the United States, Ethiopia, Peru, Chile, Colombia, Uruguay, and Argentina.<sup>56</sup> Rigorous global evidence suggests that summer or after school programs can lead to important learning gains for the most disadvantaged.<sup>57</sup> According to the UNESCO, UNICEF, World Bank Survey of National Education Response to COVID-19 School closures, almost a quarter of educational systems plan to increase class time in the second half of the year.<sup>58</sup> For example, France allocated €200 million to provide "learning vacations," which will be fully-funded for children of modest backgrounds. Through this program, one million children can go to their regular schools, a summer camp in the countryside or coastal areas, learning summer camps, or learning leisure centers to catch up on learning and play.<sup>59</sup>

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<sup>53</sup> UIS and ACER have recently designed a strategy for Monitoring the Impacts on Learning Outcomes (MILO), using recently implemented Regional Learning Assessment, such as PASEC (2019) or National Learning Assessments as baselines, and designing temporally comparable instruments.

<sup>54</sup> OECD, World Bank, Global Education Innovation Initiative, *hundrED* (2020).

<sup>55</sup> UNESCO (2020b).

<sup>56</sup> Patall et al. (2010), Murnane and Ganimian (2014), Orkin (2013), Agüero (2016), Bellei (2009), Pires and Urzua (2014), Hincapié (2016), Cerdán-Infantes and Vermeersch (2007).

<sup>57</sup> McLaughlin and Pitcock (2009), Allensworth and Schwartz (2020), Snipes et al. (2016).

<sup>58</sup> UNESCO, UNICEF, World Bank (2020a, b, c).

<sup>59</sup> Ouest-France (2020).

Individual students that are particularly behind their peers might require dedicated attention, such as one-to-one or small group tutoring, once schools re-open.<sup>60</sup> Existing evidence shows that high-dosage tutoring (at least 4 times per week) with a small group of students (less than 6 children) substantially impacts learning, especially if conducted during school hours.<sup>61</sup> For instance, having recent college graduates provide one-to-one tutoring to high school students in Boston for four days per week led to learning gains equivalent to one or two additional years of math in a single school year, above and beyond what students typically learn. In Niger and Nigeria, a 6 h per week tutoring program targeting displaced and refugee children also had significant impacts on student's reading and math, especially when accompanied with socio-emotional learning activities (mindfulness and Brain games).<sup>62</sup> Programs that combine cognitive-behavioral therapy with academic tutoring have also shown substantial effects on students' dropout rates in at-risk communities in the United States and Canada.<sup>63</sup> However, a math tutoring intervention and a cognitive-behavioral therapy-based program in Mexico, which had limited take-up, found mixed effects on socio-emotional skills and no effect on math scores.<sup>64</sup> When designing tutoring programs, incentives must be carefully designed. As documented by several scholars, private tutoring can cause negative distortions on the education system when teachers offer for-profit tutoring to their same students. This gives them a pervasive incentive to teach less during their regular classes to generate demand for tutoring.<sup>65</sup>

To respond to COVID-19, 62% of countries plan to introduce a dedicated remedial program. For instance, England set up a £1 billion fund with two branches: £350 million will be directed to ensure the most disadvantaged pupils can access tutors over the year, and £650 million will be directed to primary and secondary schools who will have the choice to provide additional 1-on-1 or group tutoring for any pupils that they identify need it.<sup>66</sup> France will fund 1.5 million additional teaching hours so that all students have the option of taking at least 3 h of homework support per week under the *Devoirs faits* program (which offers voluntary homework support).<sup>67</sup> The Philippines also issued a plan where students who earn less than a 75% grade receive remedial classes for six weeks. As an alternative, schools have the option to organize make-up classes for the upcoming year.<sup>68</sup>

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<sup>60</sup> Evidence for Learning; Elbaum et al. (2000).

<sup>61</sup> Education Endowment Foundation; Nickow et al. (2020), Allensworth and Schwartz (2020), Robinson et al. (2021).

<sup>62</sup> 3EA (2017).

<sup>63</sup> Adelman and Székely (2017).

<sup>64</sup> Avitabile et al. (2019).

<sup>65</sup> Bray and Lykins (2012), Dang (2007), Jayachandran (2014), Azam (2016), Bray et al. (2014), Bray (2003), Ille (2015).

<sup>66</sup> Richardson (2020).

<sup>67</sup> UNESCO (2020b).

<sup>68</sup> Ibid.

Initiatives to target instruction by learning level, instead of grade or age, are worth considering as an alternative to catch-up on learning. These programs involve grouping students by their level of knowledge with instruction designed to continuously assess their progress and scaffold knowledge to advance to the next level. Different modalities involve grouping students for all or part of the school day; grouping them during school, in after-school classes, or during summer-camps; relying on government teachers, volunteers, or teaching assistants. These programs have been implemented successfully in several settings, including Kenya, Ghana, Zambia, India, and Brazil.<sup>69</sup> Under the *Acelera Brasil* program, students were divided into separate classes according to their needs. Those that were lagging the most received supplementary classes that allowed them to catch up. Within five years, 52% of participating students in the State of Paraíba passed more than one grade and rejoined their appropriate age group. In the State of Pernambuco, the dropout rate was significantly lower than the average after the program was implemented (3.2% vs. 14.8%). In the State of Tocantins, 99% of the program graduates were promoted to the next level.<sup>70</sup> In India's Balsakhi Program, a tutor from the local community worked with a group of 15–20 children who were falling behind their peers for two hours each day (out of the 4 total school hours). In this time, the tutor focused on improving core competencies having substantial positive impacts on learning.<sup>71</sup>

Computer-assisted software can aid in tailoring instruction to the students' needs and can be used while schools are closed and relying on online platforms to deliver distance learning. For instance, in an intervention in Vadodara (India), which had statistically significant improvements in learning outcomes, grade four students accessed two hours of shared computer time per week to play math games that responded to their ability.<sup>72</sup> Another rigorously studied intervention with very positive impacts provided after school instruction 6 days per week, with 45 min of individual self-driven learning using the Mindspark app, followed by 45 min of guided group learning (using a teaching assistant and 12–15 students).<sup>73</sup> Similar interventions in advanced countries (and in Uruguay at a national level) have also found positive results, particularly for the most vulnerable.<sup>74</sup> Post COVID-19, the Government of Ecuador plans to improve students' academic readiness with important curricular knowledge gaps by providing Adaptive Computer Assisted Remediation Programs for 12 months to 16,000 first-year students in 90 technical institutes nationwide.<sup>75</sup>

Finally, accelerated learning programs can reduce learning inequality. These programs aim to complete the education outcomes in a shorter period and normally provide an alternative route to return to learning for those behind their age-peers after dropping out of education. Such programs have been implemented in Afghanistan,

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<sup>69</sup> Dufflo et al. (2011), Banerjee et al. (2017).

<sup>70</sup> UNESCO (2020b).

<sup>71</sup> Banerjee et al. (2007).

<sup>72</sup> Muralidharan et al. (2019).

<sup>73</sup> Banerjee et al. (2007).

<sup>74</sup> Escueta et al. (2017), Perera and Aboal (2017).

<sup>75</sup> Angel-Urdinola (2020).

Bangladesh, Brazil, Burundi, Cambodia, Ghana, Honduras, Liberia, Malawi, Sierra Leone, Tanzania, Mali, Burkina Faso, Niger, and Ethiopia, among others.

Most of these interventions have focused on primary, small multi-age, and multi-grade classes. In several cases, community-based volunteers have been used as facilitators, who were supported with detailed lesson plans and a streamlined curriculum focusing on foundational and relevant learning. Often, these programs have started with mother-tongue instruction, for at least 3–4 h per day, and were introduced as a time-bound response to a crisis (e.g., conflict). Some of them have been successful in terms of access, completion, retention, and learning.<sup>76</sup>

Although interventions were exposed separately, governments will likely need to design a package of multiple interventions to keep students engaged, get them to reenroll and support them in staying and succeeding at school. These interventions might complement each other, as seen in a multifaceted program in India which involved door-to-door campaigns to enroll girls who had either dropped out or had never enrolled in school, activity-based and playful teaching to students grouped by ability, stronger school management communities, and work with the community to promote girls' education. This intervention was successful in increasing enrollment (8% in the first year and 12% in the second), reducing gender gaps in school retention, increasing learning (0.3 s.d. in the first year and 0.16 in the second year) and improving school management.<sup>77</sup>

## 16.6 Concluding Remarks

Learning depends on a set of school and family inputs, and innate ability and motivation. Variances in the availability of those inputs will generate different learning outcomes. The availability of both family and school inputs differ by income and socioeconomic status and the effects of these two inputs is compounded by the complementarity between them. On one hand, more equitable equilibriums require interventions to improve the availability of family inputs among disadvantaged groups via social protection policies or direct assistance to improve learning conditions at home (connectivity, devices, learning materials). On the other hand, governments need to enact education policies to enhance inputs (teachers, management, learning materials) in schools serving disadvantaged students.

When governments decided to close schools, the highly unequal distribution of family inputs both between and within countries, such as access to a mobile phone or internet and parental levels of education, took on greater importance. Differences in school inputs were already generating inequality of opportunities before the pandemic. But now, differences in conditions at home started being more relevant in defining variation in education opportunities. As shown here, there are large differences in the availability in critical inputs across countries and within them. For

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<sup>76</sup> Longden (2013).

<sup>77</sup> Delavallade et al. (2019).

example, internet access reaches 87% in rich countries but only 24% in poorer ones. Moreover, inequality in access varies dramatically within countries. In rich countries for example, access to internet does not differ much between the bottom 60% and the top 40% in the income scale. In low-income countries access rates are double for the top 40%.

But the difference in these inputs interacts with the differences in parental education. We find that engagement level of students varies markedly according to the level of education of adults in the household. Learning inequalities are likely to increase, as the level of learning engagement during the pandemic is drastically higher for children of highly educated parents. While more than 80% of students from households with a highly educated adult (tertiary education) have remained engaged in learning during the period of school closures, engagement is much lower in households with adults with lower education levels; in several of the countries, students from a less well-off background (adults with no education) were 3–4 times less likely to be engaged in a learning activity during the same period.

Learning data post-pandemic is not available yet, except for a few European countries which report learning losses equivalent to the extent of the school closures and highly unequal, despite smaller differences in family and school inputs, along the income scale. Using data for some middle-income countries, we complement this analysis with simulations of learning losses by quintile of income. If schools are closed for a whole school year in Chile, students from the lowest income quintile could lose up to 95% of their yearly learning while those in the highest quintile could lose up to 64%. Simulations for Colombia show that even with partial school reopening, fifth-grade students' learning loss in the bottom quintile could double the top quintile's loss. In Indonesia it is estimated that after only four months of school closures, the difference in reading outcomes in PISA between secondary school students in the richest and the poorest quintile will increase from 1.4 years of schooling to 1.6 years of schooling.

COVID-19 is not only leading to potentially lower learning but likely resulting in a learning inequality catastrophe. Hence, countries urgently need to implement compensatory measures to avoid turning the temporary increases in inequality into permanent ones. Some of these measures can be implemented once schools re-open, while others need to be implemented as soon as possible, complementing remote learning interventions.

In the short-term, a critical task of education systems is to avoid that the potential impacts of COVID-19 described above transform from student disengagement and an eventual school dropout. Therefore, compensatory education policies should identify and reach out to students suffering the most and keep them engaged to ensure that they return to school once they re-open. Strategies to encourage reenrollment include information and communication campaigns, financial and non-financial incentives, early warning systems with targeted support interventions, and special education programs for pregnant girls when banned from school.

Once schools re-open, at least in a hybrid way, the focus should be on compensating learning losses. To help those with the biggest learning gaps catch-up, countries

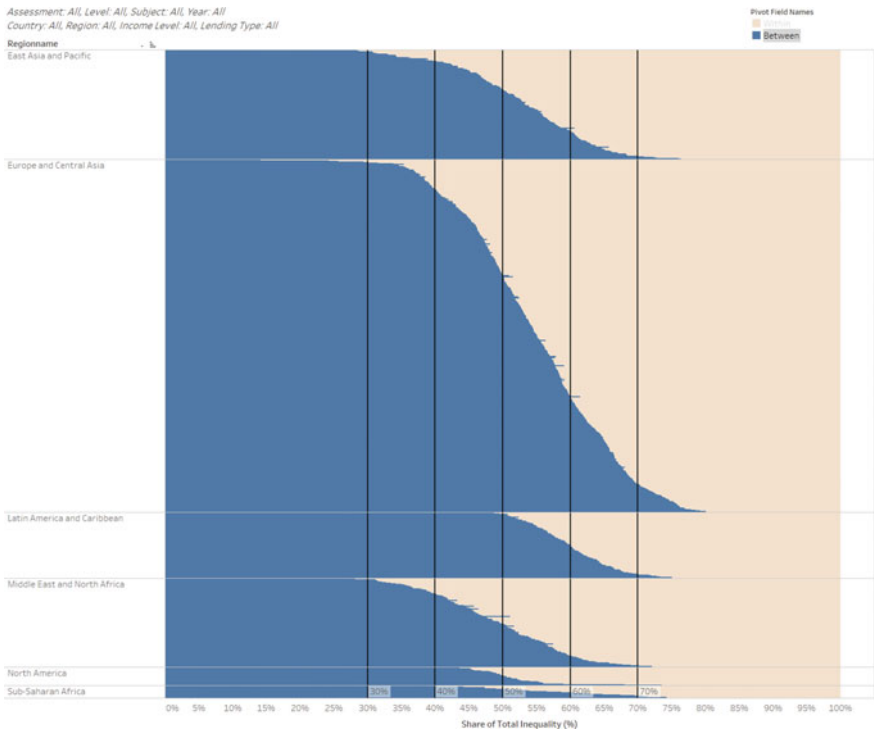
need to urgently measure the extent and the incidence of the learning loss and implement compensatory education policies, including additional teaching time, specific pedagogies targeted at those furthest behind (such as teaching to the right level methodologies), and tutoring or accelerated learning programs.

### Annex I—Complementary Figures

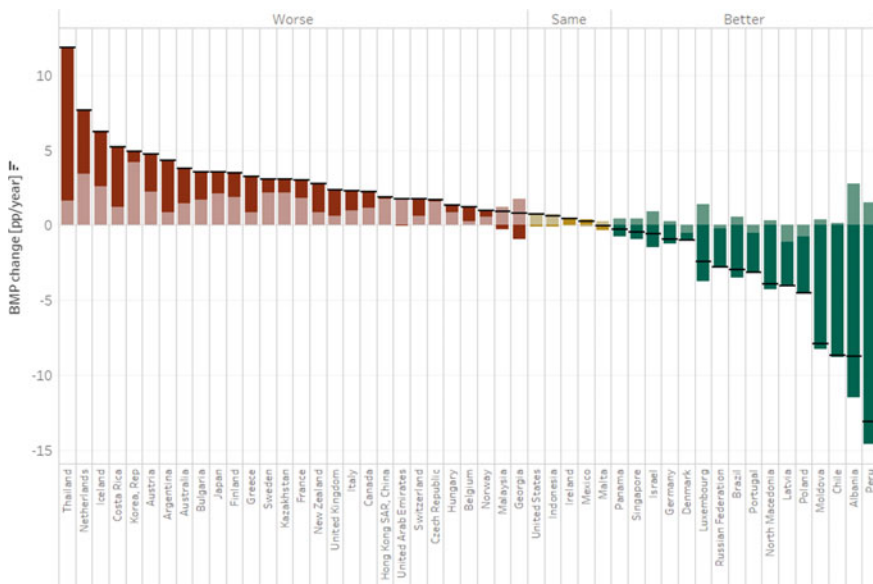
See Figs. 16.13, 16.14, 16.15, 16.16 and 16.17.

### Annex II—Description of Data Sources

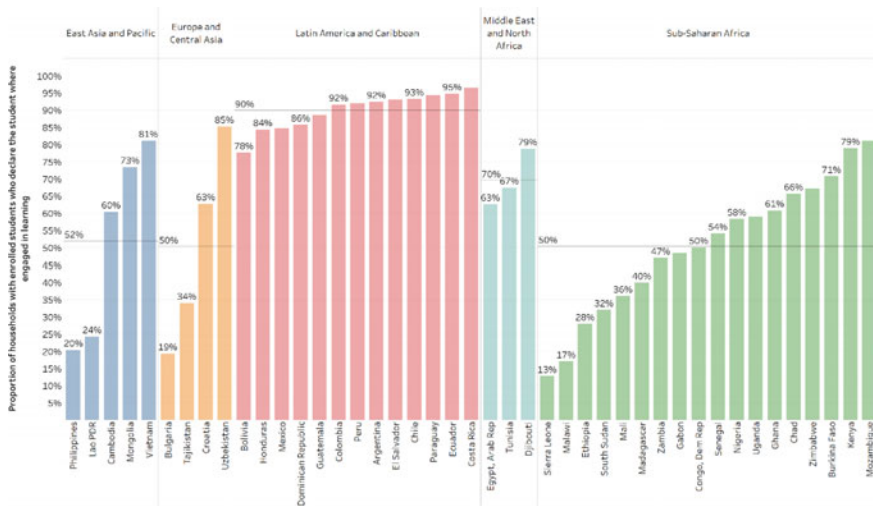
- Microdata from international learning assessments: PISA and TIMSS
- World Bank High-Frequency Phone Survey (2020)
- UNESCO-UNICEF-World Bank Joint Survey of Government Responses



**Fig. 16.13** Distribution of, between, and within country learning inequality by region, accounting for rurality, gender, income levels, and school characteristics

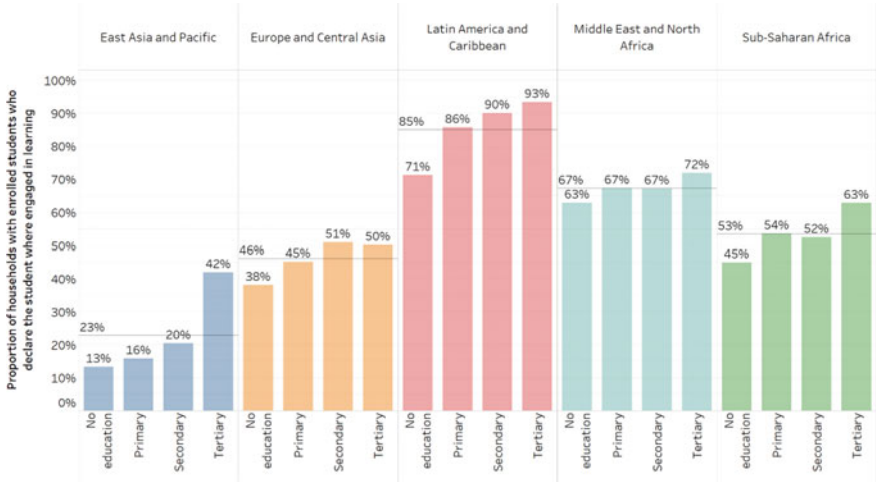


**Fig. 16.14** Changes in Below Minimum Proficiency, decomposing by changes in average proficiency and changes in distribution. (Datt—Ravallion Decomposition). *Source* Azevedo and Goldemberg (2020b)

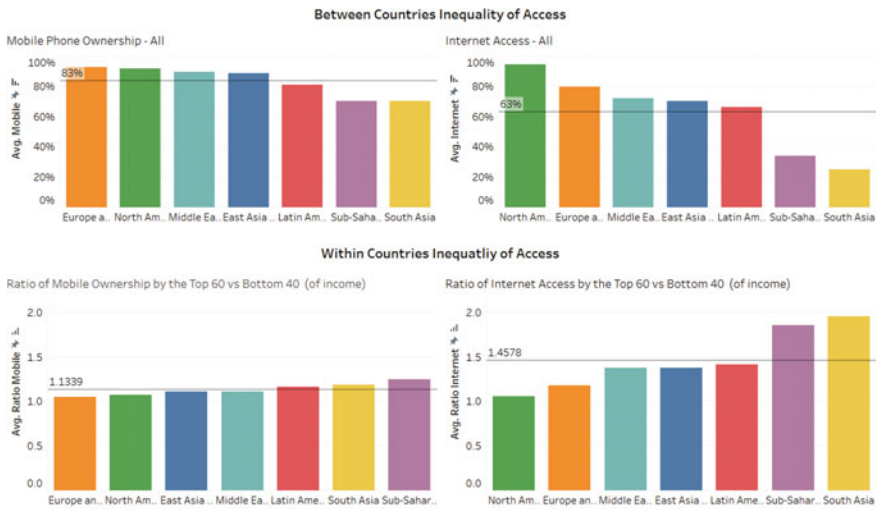


**Fig. 16.15** Share of household learning engagement in the past 7 days, by Country. *Source* Author’s calculation using the World Bank High-Frequency Phone Survey (2020). *Note* Survey responded at the household level. Responses reference 7 days. Latin American responses from Wave 1 were removed to avoid a different reference window





**Fig. 16.16** Share of household learning engagement in the past 7 days, by Region and Highest Adult Educational Level. *Source* Author’s calculation using the World Bank High-Frequency Phone Survey (2020). *Note* Survey responded at the household level. Responses reference 7 days. Latin American responses from Wave 1 were removed to avoid a different reference window



**Fig. 16.17** Between and within country variation on ownership and access to mobile phones by region

- Gallup World Pool, 2019
- World Bank Learning Poverty Database
- SAEB and Brazilian School Census.

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**João Pedro Azevedo** is a Lead Economist, EdTech Fellow and Education Statistics Coordinator from the World Bank Education Global Practice. He currently works on projects related to the measurement of learning poverty and human capital, the support to countries on how to accelerate learning, and the scale-up of population measures of educational outcomes. Before joining the World Bank, João Pedro served as the superintendent of Monitoring and Evaluation at the Secretary of Finance for the State of Rio de Janeiro, as well as a research fellow at the Institute of Applied Economic Research from the Brazilian Ministry of Planning (IPEA). While at IPEA, João Pedro led the design, implementation, and dissemination of the Monitoring and Evaluation systems for the Brazilian Adult Literacy program “Brazil Alfabetizado” from the Secretary of Adult Education at the Ministry of Education. Also, while in Brazil, João Pedro often worked with private sector foundations, such as Fundação Roberto Marinho and the Instituto Itaú-Unibanco on the design and evaluation of educational programs. He is a former chairman of the Latin American & Caribbean Network on Inequality and Poverty and holds a Ph.D. in Economics.

**Marcela Gutierrez** has 10 years of experience designing, implementing, and evaluating human development programs and large-scale research projects in diverse country contexts. She is currently an Education Specialist at the Education Global Practice of the World Bank. Prior to this, she supported the implementation of the STEP Skills Measurement Survey and worked as an Advisor to the Ministry of Social Development and Inclusion in Peru and as a Consultant for the Interamerican Development Bank, UNRWA and Innovations for Poverty Action. She holds a master’s degree in Public Administration and International Development from Harvard University and in Economics from Universidad de los Andes.

**Rafael de Hoyos** is a founding partner of Xaber, lecturer at the “Instituto Tecnológico Autónomo de México” (ITAM), and an economist in the education unit of the World Bank. He has published in peer-reviewed journals and advised governments on school-based management, evaluation policies, strategies to reduce dropout rates, and other topics. Previously, he was the chief of advisers to the under minister of education in Mexico (2008–11). Before joining the under ministry, he worked in the Development Economics Vice Presidency at the World Bank (2006–08), at the Judge Business School at the University of Cambridge (2005–06), and as a consultant for the United Nations Economic Commission for Latin America and the Caribbean in Mexico and at the United Nations World Institute for Development Economics Research in Finland. He holds an MA in development from the University of Sussex and a Ph.D. in economics from the University of Cambridge.

**Jaime Saavedra** is the Global Director of Education at the World Bank. Between 2013 and 2016, he served as Minister of Education of Peru. During his tenure, comprehensive reform in basic education and in the university system was implemented; Peru's performance improved substantially as measured by international learning assessments. He was Director for Poverty and Equity at the World Bank and co-led the work on the institution's twin goals of extreme poverty and shared prosperity. His research has focused on poverty and inequality, labor markets and economics of education. He was Executive Director of GRADE, a Peruvian think tank, has taught at Pontificia Universidad Católica del Perú and has been Visiting Professor at the University of Toronto. He holds a Ph.D. in Economics from Columbia University and a BA in Economics from the Pontificia Universidad Católica del Perú.

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# Chapter 17

## Conclusions and Implications



**Fernando M. Reimers**

**Abstract** This chapter concludes the book, drawing on the preceding chapters to identify overarching themes that summarize the nature of the educational impact of COVID-19. It describes the educational loss that was created by the pandemic, particularly for disadvantaged students and more so in countries with lower levels of per capita income. Those losses were the result of impacts of the pandemic on poverty and household conditions, as well as the result of insufficient capacity of remote instruction to adequately sustain opportunity to learn. The efforts to maintain educational opportunity and to close equity gaps during the pandemic in some countries are also discussed, in the context of the role of educational inequality before the pandemic and of initial conditions to support remote instruction. The chapter examines also some of the silver linings resulting from the pandemic in the education sector, such as the greater recognition of the importance of schools, and of in person schooling, and the necessity to support the emotional and social development of students, in addition to their cognitive development. The chapter concludes discussing the challenges ahead created by the pandemic and underscores the urgency of maintaining the priority of education and remediating those learning losses during the remaining period of the pandemic and in the immediate aftermath, to mitigate the likely increase in poverty and social inequality that would result from the educational losses during COVID-19.

### 17.1 The Educational Consequences of COVID-19 Differed by Country and Class

The COVID-19 pandemic created an unprecedented challenge for educators and education systems around the world. The impact of the pandemic on the conditions in which students live, the risks to their health, and the impact of the economic recession on their families increased the challenges for students in finding the time,

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F. M. Reimers (✉)  
Graduate School of Education, Harvard University, Cambridge, USA  
e-mail: [fernando\\_reimers@harvard.edu](mailto:fernando_reimers@harvard.edu)

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space, and focus to study. In addition, the adoption of social distancing measures and alternative ways to educate remotely when in-person instruction was interrupted reduced opportunities to learn and caused many students not only to struggle to learn what was expected in the curriculum, but to lose skills and knowledge they had previously gained and to disengage with learning.

At the same time, for some students, the experience of learning in different ways during the pandemic provided the opportunity to gain new knowledge and develop new skills. It provided an opportunity to gain more autonomy in learning, to spend more time with their families, and to learn together with their families. Parents gained knowledge from this increased engagement in the education of their children and time spent together focusing on the work they did in school and their own children's learning experience. Similarly, teachers gained greater knowledge about the home circumstances of their students because of the necessary collaboration with their parents. As shown in Chap. 15, studies in France, the United States, the United Kingdom, and Ireland reveal that parents spent more time assisting their children with schoolwork during the pandemic than before, but only about half of them felt adequately prepared to do so. For teachers, the strategies of remote learning likely increased their Digi-pedagogies, while increasing students' knowledge of how to learn remotely, although for many the approach was 'sink or swim', with limited support, hardly adequate to develop optimal proficiency or confidence.

These effects differed greatly among children in different socioeconomic circumstances, among different types of schools, and among different countries. For individual students, the educational effects of the pandemic were mediated by other conditions, mainly the education and resources of their parents. Some of these conditions were in turn aggravated by the pandemic—as poverty and social inequality increased, and as children in large families who shared limited space and connectivity resources at home had less space, time, and peace of mind to study as they were confined to their homes, where they had to study.

The differences of success in managing the spread of the virus across countries resulting from differences in the quality of political and public health leadership, differences in health infrastructure, risks, and financial and institutional resources resulted in considerable variation across countries in the duration of the period when in-person instruction was replaced with remote options. Furthermore, differences in technological infrastructure, access to connectivity, and previous experience and knowledge of Digi-pedagogies resulted in differences across countries, and among students within the same countries, in the amount of engaged learning time experienced by different students. While there are very few reliable estimates of how much learning took place during the pandemic, or of how much learning was lost, the available evidence shows considerable learning loss and greater loss for students from disadvantaged backgrounds, accentuated in countries with greater percentage of disadvantaged students as Brazil, Chile, Mexico, or South Africa. Even in Finland, where schools were closed for a relatively short period of time, and where students and teachers had adequate supports to learn remotely, there is evidence of reduced student engagement during remote instruction. In Norway, another country with robust technological infrastructure, there was a drop in writing proficiency of first grade students

who were taught during the pandemic, relative to their peers in previous years. A learning loss in the first-grade equivalent to one and a half semesters because of a two-month period of school closures underscores the limitations of remote instruction. In the United States students with the lowest levels of engagement during the period of remote instruction were disproportionately low income and racial minority children.

No cross-national estimates of learning loss during the pandemic are available yet, but the obvious differences across countries in the duration of the period of remote learning and in the percentage of students who were reached with the remote strategies that were implemented suggest that there have been unequal effects across countries in the extent of learning loss experienced by students, in the inequality of learning loss for students from different backgrounds within countries, and in the ensuing disengagement and dropout for those students who learned the least and for whom the alternative arrangements created during the pandemic were least effective.

The pandemic created a context in which students in least developed countries experienced the brunt of six mutually reinforcing challenges: the longest school closures, the lowest levels of resources and institutional capacity to mitigate learning loss, lower levels of access to vaccines, the greatest increases in poverty, lower effectiveness of alternative modalities to education, and the greatest levels of social and educational inequality. For these varied reasons, it is likely that the two most important mediators of the COVID-19 pandemic's impact on educational opportunity were nationality and social class.

## **17.2 Educational Opportunity Before the Pandemic, During the Pandemic, and Beyond**

The attempts to educate during the pandemic revealed very large differences in the social circumstances in which different children access and engage in learning and made visible the extent to which those differences matter to how much students can learn. The role played by those circumstances is not unique to the period during which students were forced to learn from home. The fact that some children live in homes where they experience food insecurity, or other effects of poverty, including the stress of living in vulnerable conditions, or the fact that some children have parents who have less education, time, or resources with which to support them in their studies was a fact that had influenced opportunity to learn before the pandemic, it just became more visible during the pandemic. Social class will likely continue to influence educational opportunity in the aftermath of the pandemic, perhaps its importance augmented by the increase in poverty and inequality that the pandemic will produce.

Schools were created, in part, to provide all students opportunities to learn, and aspirations about their role in equalizing opportunity for all students are about creating a space to mitigate the differences that those social factors play. The efforts

to teach during the pandemic made more visible how very challenging it is to level the playing field for students given their different social circumstances and how much harder it is to do that when the work of schools is so directly mediated by circumstances at home as it was during remote learning.

The evidence examined in this book suggests that, by comparison, in-person instruction is more effective at leveling the playing field than the arrangements that education authorities were able to put in place during the pandemic to educate remotely. This observation needs to be moderated by the fact that the pandemic had a disproportionate impact in the social circumstances of the poor, making them more vulnerable to infection or death, or reducing their income, so there would have likely been increases in inequality of opportunity to learn even if schools had remained open the entirety of the pandemic. It should also be acknowledged that the arrangements to educate remotely were put in place quickly, with limited resources and support, and so it may be unfair to think of the arrangements of remote learning that were improvised during the pandemic as the optimal form of remote learning, although these arrangements represent the largest global experiment in remote learning at scale since the creation of public schools with the mandate to educate all children.

Those caveats notwithstanding, one of the lessons surfaced by the pandemic is that educational opportunity can only be leveled off with actions that effectively meet the very different needs of children from various circumstances, particularly the many needs and vulnerabilities caused by poverty, but also other needs including special learning needs. Those vulnerabilities are considerable and require a clear focus in supporting students experiencing them, with adequate resources, knowledge, and the capacity to provide educational and non-educational supports that create an adequate environment for students to learn. This, of course, is not to say that there was equal educational opportunity before the pandemic, but it appears that in-person instruction is more effective at equalizing opportunity than remote instruction. Low-income students, those in earlier grades, and special needs students were the least adequately supported to learn remotely.

There were some countries in which attention and resources were disproportionately targeted to support the education of disadvantaged students, although no information is available on the extent to which these were able to prevent an increase in inequality in opportunity to learn. In Singapore, where students and teachers had developed skills for online learning prior to the pandemic, and where the use of Digital pedagogies intensified in preparation for school closures, the government distributed computers and provided connectivity to the students who lacked them as part of the remote learning strategy. Singapore's modest interruption of schooling was largely a result of the effective containment of the health crisis and of coordination between education and health authorities.

In Portugal, policy pronouncements emphasized the priority of maintaining educational opportunity during remote learning, and partnerships between organizations of civil society and government agencies made efforts to reach out to disadvantaged students. In Japan, the government distributed devices to disadvantaged students during the phase of remote learning.

In Norway, despite the adequate access to infrastructure and high levels of teacher quality, the engagement of low achieving students during remote instruction diminished more than the engagement of their high achieving peers. Furthermore this country where equality of educational opportunity is normally a policy priority, did not implement strategies to equalize opportunity during the remote learning phase.

The vast differences among students in different schools in their capacity to learn from alternative arrangements also underscores the urgency of democratizing the opportunity to learn autonomously, a likely precondition for lifelong learning. Unless schools provide greater access to connectivity and devices, and the skills to learn remotely for all students and teachers, they will be denying some students essential skills to learn independently throughout their lives and arguably denying them the opportunity to participate fully in society, as such participation is increasingly mediated by technological means.

One of the challenges of the multimodal strategies of remote learning deployed by several countries during the pandemic is that the most advantaged children had access to the most interactive modalities, such as internet-based options which provided opportunities for interaction, whereas those least advantaged had to rely on radio or printed materials or on digital options that were only used to transmit content, with limited opportunities for interaction and feedback. In South Africa, for instance, a considerable number of low-income black children had no access to internet or devices to support learning remotely. A similar lack of access to online remote instruction was observed, to varying degrees, among low-income students in most countries, although higher income countries were able to remediate these needs by providing devices and connectivity, as was the case in Finland, Japan, or Singapore, and only the best prepared and supported teachers were able to create opportunities for interaction with their students.

At the same time, the deficiencies shown by the digitally-based solutions enacted during the pandemic, even in contexts in which students and teachers had considerable access to devices, connectivity, and benefited from prior experience in Digi-pedagogies, such as in Finland, or in countries which made efforts to provide such access during the pandemic, underscore the social and multidimensional nature of learning, and the unique value of in-person interaction to derive the full benefits of the school. We learn with others, in interaction with them and by collaborating with them, and those social interactions are essential to the integration of thoughts and emotions which sustain learning. It is collaboration with others and this interaction that sustains our motivation and helps us learn, as our brains are wired for social interaction—not just with teachers, but with peers, and not just in activities led by teachers in the context of the formal curriculum, but in activities led by students. This is true both for the intended and explicit curriculum and for the implicit and tacit curriculum—what we learn from interacting with others. In-person instruction also facilitates multiple ways of learning with and from others, not just while students work at their desks in the classroom, but when they engage in sports or the arts, or simply in spontaneous and informal conversation with peers. In Russia, for instance, educators and students agree that the quality of remote instruction was lower than in-person instruction, especially for subjects which required student participation,

such as physical education, arts, music, or, paradoxically, technology. Less than half of the parents in Russia indicated that remote instruction provided opportunities for interaction with teachers. Chap. 15, examining remote instruction in five OECD countries, shows that most remote instruction consisted primarily of delivering lessons and content, with very limited opportunities for interaction. In the United States, the utilization of online instruction increased with the level of education and of income of the parents, whereas children of low-income parents were more likely to rely on printed materials. The same study shows that parents were concerned about the quality of remote education, and about the limited opportunities for social development it provided. Chap. 5 shows that in Japan there was an increase in student depression during the period of remote instruction. Even while acknowledging the hasty nature of the alternative arrangements put in place during the pandemic resulted in a sub-optimal way to organize remote instruction, and to support collaboration and social interaction with peers, the deficiencies of such arrangements suggest that there are unique benefits to in-person instruction and suggest that digital instruction is a deficient replacement for in person schooling.

The heterogeneous results of learning remotely during the pandemic are not just a function of the different ways in which the pandemic impacted students and their families, but of the fact that, in the rapid and fluid context in which alternative delivery systems were developed, there were no standards and no consistency. As a result, on top of the already considerable inequality of education conditions experienced by students in school systems which segregate disadvantaged students to schools of low quality the lack of standards and inconsistency in approaches diminished opportunities to learn under remote learning. Such lack of standards was most problematic in highly decentralized systems such as the United States, which left school districts to define what remote instruction would mean, resulting in vast inequalities in approaches as shown in Chaps. 14 and 15. Also in Chile, Mexico, Russia, and South Africa vast preexisting inequalities, high decentralization, and deficient guidance and support exacerbated inequalities in remote learning opportunities.

This heterogeneity, resulting from a lack of clear standards and insufficient compensatory efforts to close equity gaps, extended even to whether the goals of the strategy for remote instruction were to maintain students' engagement with education, actually support learning, provide guidance for the amount of learning time, or define what was meant by remote instruction. As shown in Chap. 15, in France, and in the United States remote instruction prioritized maintaining student engagement over learning new content. The same finding is reported in Chap. 13, focusing on remote instruction during the pandemic in the United States.

### **17.3 The Role of Initial Conditions Mediating the Educational Impact of the Pandemic**

Education systems were in varying stages of readiness to sustain educational opportunity in the face of the disruptions caused by the pandemic. Those differences included access to connectivity at home and skills to learn and teach online, as well as level of resources, capacities, and institutional structures to meet gaps during the emergency. Whereas Finland, Japan, Norway, and Singapore had high levels of connectivity, and resources to provide equipment and connectivity to students during the interruption of in person instruction, levels of connectivity and resources were lower in Brazil, Chile, Mexico, and South Africa. Russia had high levels of connectivity but low bandwidth. It should be noted, however, that even countries with high per-capita income and high levels of connectivity, such as Finland, Japan, and Singapore, found that vulnerable groups of children lacked access to digital devices at home. However, these countries were able to provide devices to students once it became clear that they needed them. Similarly, in Australia, France, Ireland, the United Kingdom, and the United States, a sizable number of children, predominantly from low-income and minority backgrounds, had challenges with access to connectivity and devices. Other countries, such as Brazil, Chile, Mexico, and South Africa, facing even greater levels of exclusion from connectivity and devices, found it more challenging to meet these needs during the emergency.

Similar gaps were observed in teacher capacity. Whereas Finland, Japan, Norway, and Singapore had made greater investments in Digi-pedagogies prior to the pandemic compared to other countries, which eased their transition to remote instruction, countries such as Brazil, Chile, Mexico, and South Africa had not made such investments and consequently found it more challenging to adopt remote instructional strategies. In Finland, the switch to distance learning during the period of school closure was relatively seamless. Nevertheless, even in that context there was less learning during remote instruction as revealed by the lower percentage of students who experienced optimal learning moments in STEM during remote instruction than during in person instruction. In Mexico, the national strategy relied on platforms to transmit content, such as radio and television, acknowledging that the deep gaps in teachers' capacity in Digi-pedagogies in many public schools would considerably limit the reach of a strategy based in online learning.

Institutional fragmentation and school segregation contributed to augmenting inequality, as was the case in Chile, South Africa, Spain, and the United States. In Chile, as shown in Chap. 3, the already-large inequalities in educational opportunity, produced by a highly stratified education system, were augmented with remote instruction, because of differential capacities of schools to provide adequate supports to the varying needs of children. South Africa's two-tiered system for students from different socioeconomic groups saw the greatest reductions in opportunities to learn in high poverty schools. In Spain, extreme discontinuities in education policy over the years and high institutional fragmentation undermined the effects of national guidance and support to teach remotely, as those were mediated by decisions made

in the autonomous regions of the country. In the United States, decentralization of governance and finance resulted in vastly unequal levels of engagement with remote education among students of different socio-economic and ethnic background.

The mechanisms to compensate for social disparities, providing more focus and resources to disadvantaged students, were weaker for remote learning than for in-person instruction. Portugal stands out as a country in which policy guidance prioritized maintaining equality of educational opportunity and Singapore was able to rapidly compensate the lower levels of connectivity of children from disadvantaged homes. Even Norway, with a long-standing commitment to equal educational opportunity, lacked specific programs to provide differentiated support to disadvantaged students learning remotely. In contexts of greater institutional fragility, such as Brazil, Chile, Mexico, Spain, and South Africa, compensatory efforts during remote learning were even more elusive.

## 17.4 The Silver Linings

Fully acknowledging the shortcomings of the rapidly designed and implemented arrangements that were created to educate during the pandemic, and in particular their limitations to close the pre-existing equity gaps that were in many cases augmented by the different ways the pandemic affected the circumstances of children from different social classes, there is no question that teachers, education authorities, civil society organizations, and parents made considerable efforts to maintain education during the pandemic, creating numerous innovations to do so.

Furthermore, such efforts to maintain education were made in a context of imperfect and evolving knowledge about how the virus spread and with uncertainty regarding when a vaccine would be available and when the pandemic would be brought under control, which created uncertainty about whether schools were likely environments to spread the virus.

It is remarkable that education remained a priority for governments during a time when the public health emergency—and its economic consequences—placed considerable burdens on government resources and capacity. This speaks to the institutionalization of the idea that education is indeed not just a human right, but a basic need, an essential activity for children and that it had to be protected and continued. In the cases in which the national government did not prioritize supporting the continuity of education during the pandemic, as in Brazil, this was mostly over contention about jurisdiction and, in that case, state and municipal governments stepped up to prioritize education. In the United States also, the federal government failed to lead in maintaining a priority for education, but this is consistent with the fact that education is primarily a state and local responsibility. In Mexico, where the national government developed a national strategy for remote education based on television, perceived by many as insufficient, state governments supplemented it with other delivery channels including radio, online instruction, and printed materials. In other countries in which regional or local authorities have primary responsibility for education, such



as Finland, Japan, Russia and Spain, the national government took a more proactive role during the pandemic providing guidance and support to prioritize the continuity of education.

It is not always the case that education is prioritized in other contexts of emergency, such as those created by a civil conflict or natural disaster. In contrast, the efforts to generate and fund alternative approaches to educate during the pandemic were significant. By comparison to the relatively low priority that the education of refugee children, for example, receives from governments and from international development organizations, the response of governments and international agencies to the education needs of children whose education was challenged by the pandemic was of a considerably greater order of magnitude. If the same commitment and priority to educate displaced and refugee children were extended to reverting the educational disruptions caused by their displacement, their educational opportunities would be considerably greater than they are at present.

Just as admirable as governments' and societal commitment to maintaining education during the pandemic was the velocity at which alternative arrangements to educate were established, particularly during the early phase of the pandemic, the phase of immediate lock down of schools. In a matter of days and weeks alternative ways to sustain engagement with education were established, often the result of partnerships between governments and organizations of civil society and the private sector. The reliance on these novel delivery systems developed the Digi-pedagogies of students and teachers, or novel forms of co-teaching, as was the case in Finland, Norway, and Singapore. These rapidly developed efforts were, in hindsight, deficient, and the reason for the learning loss and increase in inequalities discussed earlier. But the sheer speed at which they were launched, often repurposing existing infrastructure and assets, is worthy of recognition. For example, the TV and radio-based programming deployed as a strategy for education continuity in Mexico repurposed existing digital assets from the Mexican television industry. When national initiatives to sustain education were deemed ineffective, or insufficient, subnational governments and other organizations of civil society stepped up to enhance or replace those efforts, as was the case in Brazil and Mexico. In Chile, there was an increase in social participation, through the use of online platforms, in defining what constituted quality education in the context of the pandemic, and as a result of such social dialogue, more emphasis was given to providing emotional support to students. In the United States, surveys of teachers and principals reported the greatest needs for support to be in the areas of socioemotional development and mental health, as described in Chap. 13.

These efforts in collective leadership to mitigate the education losses caused by the pandemic are also noteworthy and indicative of the shared recognition of the importance of education, and of schools, to society.

Perhaps the most remarkable expression of this institutionalization of the idea that education is not just a right, but an essential human right, is that it was not just national or subnational governments, organizations of civil society, or international organizations that stepped up to innovate in order to sustain education—teachers and parents did as well. The pandemic created a context for true empowerment of parents, communities, and teachers in devising approaches to educate children remotely. The

significance of that empowerment should not be lost even though the results of such a massive global effort in service of educating children were insufficient to preserve the right to education for all children, or to maintain the opportunity to learn that children would have had in the absence of the pandemic. The real counterfactual against which to assess these efforts should not be an idealized scenario in which a pandemic had not taken place (although one could imagine scenarios in which the public health crisis had been better managed than it was in many jurisdictions), but one without these efforts to sustain education, one in which parents, teachers, civil society, and governments had given up in trying to educate children during this most difficult and challenging moment for humanity, and had decided to put the right of education on hold until further notice. It is to be celebrated that this was not the response of most societies and governments, even if, unfortunately, for some children, it was the result they experienced in practice because what was done was insufficient to mitigate the many other ways in which the combination of poverty and the pandemic challenged them and their families. As already mentioned, the percentage of students facing that complete shut-down from education varied greatly across countries because of the different extent of poverty across countries and of differences in access to education resources and effective programs.

The urgency of addressing the many needs involved in sustaining education in the challenging context created by the pandemic also made visible the shortcomings in the institutional capacity of schools and education systems and stimulated the creation of networks and partnerships as a way to address those shortcomings and augment that capacity. The efforts to sustain education against the odds led to much collaboration within schools, across schools, between schools and other institutions, and across different government entities. These collaborations, intra-education and between education and other sectors, such as health, led to innovations and emphasized that such collaborations are essential to finding ways to address the many and multidimensional needs of students. The urgency to augment teacher capacity in Digi-pedagogies led many schools to support collaboration so that teachers could share what they were learning about teaching remotely, and often these collaborations extended across schools. In Brazil, Mexico, and South Africa, for instance, civil society organizations and universities stepped up to play a critical role supporting schools and teachers during remote learning.

The awareness that complex education challenges require a considerable level of institutional capacity and that the level of the school may be inadequate, too small, to provide appropriate responses, in addition to the realization of how capacity can be augmented by relying on school networks integrated with other institutions, such as universities or non-governmental organizations, has great value to continue to address the various education challenges that will persist during the pandemic and its aftermath.

The very visible ways in which the pandemic affected the wellbeing of all created a context to prioritize the wellbeing of students. This surfaced ideas about the need of educating the whole child, attending to their emotional well-being as well as to their nutrition, physical activity, and cognitive development. In Chile, for example, interest in socio-emotional development of children augmented during the pandemic,

as it did in other countries examined in this book such as Japan or Mexico. In turn, the recognition of the limitations of the alternative means to deliver education and in the circumstances under which students were studying stimulated a reprioritization of the curriculum, and with it, to focusing on the intended learning outcomes for students rather than on the content that was initially planned to be transmitted during a regular school year.

This focus on competencies over content, the obvious shortcomings of the extended time students were spending at home, and the evident struggles of some students to learn independently surfaced the need to think expansively about the competencies that will help students develop into autonomous adults were some of the significant silver linings of the pandemic, which might carry over into the future.

Perhaps the greatest educational silver lining of the pandemic was the awareness it created about how much schools matter, not just to deliver education, but to the functioning of society. The question of how much schools matter is a recurrent one in the fields of the sociology and the economics of education. It is a very difficult question to answer in societies in which most students attend school, for there is no relevant comparison group, reducing most comparisons to those between students who have accessed different levels or grades or education, or who have been educated in different types of schools. Most of those comparisons suffer from methodological limitations in the ability to properly account for unobserved differences between the groups with different levels of education. Learning remotely during part of the duration of the pandemic provided, unfortunately, a way to experience what it is like to try to learn with schools functioning in very limited ways, and more importantly, of what it is like for society to try to function when schools are closed. That natural experiment will help estimate how much schools matter. The evidence examined in this book makes clear that education in school is more effective in supporting learning for all children than the alternatives that were put in place for remote instruction, a view shared by educators and parents in Russia, for example. This awareness of the importance of education, coupled with the augmented visibility of the unequal conditions in which students learned, increased the salience of initiatives to advance equal opportunity. In Russia, for instance, where inequality had been a relatively absent topic on the policy agenda, the pandemic brought increased attention to this topic.

## **17.5 The Challenges Ahead**

The educational challenges created by the pandemic are not over and may not be over even when the pandemic is under control. To bring it under control, communities and nations will need to achieve herd immunity, which requires somewhere between 60 and 80% of the world population to be vaccinated. Reaching this level of immunization requires the availability of vaccines, a willingness of at least that percentage of the population to be vaccinated, and that no new strands of the virus, more contagious and resistant to the available vaccines, develop. Based only on the

estimated supply of vaccine doses, it is unlikely that this level of immunity will be reached, for most of the world, until well into 2022. Reluctance to be vaccinated and new strands of the virus could complicate the odds of achieving herd immunity. The reality that the pandemic will linger for some time, perhaps well into 2022, means that there are three kinds of education challenges: those involved in adapting to learning and teaching during the context created by the pandemic, in some cases involving remote distancing; of teachers and students, those involved in mitigating learning loss and ensuring that students learn what they need to learn; and those involved in reverting learning loss and building back better.

Beyond the need to mitigate learning loss and to continue to educate while the pandemic is still a risk, the education impact of the pandemic on the conditions children experience at home will continue during the pandemic's aftermath, in particular for those children whose families experience the brunt of the increase in poverty, food insecurity, and other shocks and vulnerabilities resulting from low income and marginalization.

This will require addressing the mental health challenges triggered by the pandemic, and the learning gaps caused by the pandemic, while also developing the skills necessary to address the new challenges, some of them caused by or compounded by the pandemic, such as social fragmentation and violence, growing poverty and inequality, diminished employment prospects, diminished trust in government, and climate change. Education systems face the triple challenge of recovering what was lost during the pandemic, addressing education challenges predating the pandemic, and aligning their response to prepare students for new societal and economic challenges and to build a better future.

Furthermore, given a likely economic recession and the burden of the costs of addressing the pandemic, it is conceivable that these challenges will need to be addressed in a context of financial austerity, for governments as well as individuals. The pandemic itself and its impact on other challenges is also likely to stretch government capacity, and with it the capacity to focus on education.

The constraints on financial resources will increase burdens on existing staff, already exhausted from the extraordinary efforts expended in sustaining education during the pandemic, having had to learn to teach in new ways, in a short time and with limited support, and learning to face new needs among their students created by the pandemic. Even in Finland, which had made investments in supporting teachers' capacities in Digi-pedagogies prior to the pandemic, there is evidence of teacher stress and burnout. There is similar evidence of burnout in the United States, as seen in Chaps. 13 and 14, where teachers are working more under remote instruction and enjoying teaching less. In Arizona, as discussed in Chap. 14, an already acute challenge of teacher shortages could be complicated by the new stresses on teaching caused by the pandemic.

Given the considerable learning loss experienced by many students during the pandemic, learning recovery programs will be essential. To identify what needs to be remedied, assessment of students will be necessary as well as differentiated responses by schools and for different students. Targeted and personalized programs might include accelerated programs, extended learning time, dropout prevention

programs, and increasing the capacity to learn and teach online, not just as a preventative measure against possible further interruptions of schooling but to enable extended learning time and to prepare students for lifelong learning. As explained in Chap. 13, information on what students are learning will be a critical resource to support effective efforts of remediation and recovery. Beyond programs of cognitive support, the emotional trauma caused by the prolonged stress experienced by students and teachers during the pandemic, and by the losses directly experienced by some of them, will need to be addressed through appropriate interventions. For the children experiencing the effects of poverty, those experiencing food insecurity for instance, programs to attend to their nutrition and health will be essential.

One of the main challenges during remote learning and in the pandemic aftermath will be maintaining high goals and expectations for students and schools. It is evident that, during remote learning, a view of educational opportunity as learning was displaced by a view of opportunity as access to education and engagement. This represents a setback in the understanding of educational opportunity, which had slowly transitioned over many decades from understanding opportunity as access, to understanding opportunity as learning, to opportunity as learning for all, to opportunity as learning what is needed and relevant. Maintaining the focus on high level goals for education systems in a context of diminished capacity and obvious setbacks will require leadership, resources, innovation, and systems that allow continuous improvement.

Another challenge in the immediate aftermath of the pandemic will be that in response to the stress and trauma created by the frustrations experienced learning and teaching during the pandemic, there might be a rejection of assimilating the possible silver linings and opportunities; for example, refusing to integrate Digi-pedagogies in the curriculum or denying the severity of learning loss and refusing to implement programs to remedy it. The pandemic may have blurred the memories of the many preexisting deficiencies of schools, and this, coupled with the likely austerity, may displace the urgency to 'build back better' and impede learning any of the potentially valuable lessons resulting from the innovations put in place to educate during the pandemic. For example, in Finland there is some evidence that remote learning may have worked differently for students in different grades, for different subjects or for different students. Also, in Norway the engagement of low-achieving students declined more than for high-achieving students. Discerning under what circumstances distance learning can be most effective would be of great value to expand the capacity of the school. Similarly, the forms of teacher collaboration, with peers within and across schools, to provide just-in-time professional development to augment their capacity to teach remotely provide an opportunity to advance what we know about augmenting institutional capacity. There may be valuable lessons in those collaborations to help deepen the capacity of schools to become learning organizations. Schools as learning organizations are characterized by seven features, which appear to have characterized the practices in which several schools engaged to generate and sustain remote education:

- (1) developing and sharing a vision centered on the learning of all students;
- (2) creating and supporting continuous learning opportunities for all staff;
- (3) promoting team learning and collaboration among staff;
- (4) establishing a culture of inquiry, innovation, and exploration;
- (5) establishing embedded systems for collecting and exchanging knowledge and learning;
- (6) learning with and from the external environment and larger learning system; and
- (7) modelling and growing learning leadership (Kools & Stoll 2016, p.3).

One of the lessons learned during the pandemic concerns the role of good central governance and support in ensuring consistent standards and closing equity gaps. Singapore and Brazil provide two extremes in a continuum from good to poor governance. Whereas Singapore adopted a whole of government approach, with appropriate coordination between the education and the health sectors, and with the education sector providing clear and consistent guidance and support to all schools, in Brazil the national government education response was mostly absent, while the public health response was ineffective. In that context, States and local authorities, teachers and parents were left to their own devices to figure out what to do, and state governments and civil society organizations stepped up to make up for the absence and ineffectual governmental response. Finland and Japan provide also examples of effective national government response, coordinating a national education strategy of education continuity, while Mexico and Spain provide examples of a national strategy of remote learning, judged ineffective by States and local jurisdictions, who stepped up to make up for the absence of an effective national strategy. In countries where the central state had limited jurisdiction over schools and did not assume an effective compensatory role, such as Chile, Spain, Russia, and the United States, there were greater inequalities in the education strategies adopted across regions and schools.

To conclude, the COVID-19 pandemic created an education crisis which robbed many students of the opportunities to learn what they were expected to and caused them to lose skills they had already gained. These losses were unequally distributed among different students and education systems and, as a result, if they are not reversed, the outcome of the pandemic will be increased educational inequality, from which economic and social inequality will follow. These will further complicate other social challenges, which predated the pandemic but were exacerbated by it: the challenge of increasing productivity, reducing poverty and inequality, increasing civic cohesion and trust in institutions and democratic governance, and addressing issues such as climate change or intra and interstate violence. This impact of the pandemic will most certainly extend beyond the period studied in this book, corresponding to the first year since the pandemic was declared in March of 2020. The pandemic is not under control yet and some of the ways in which it is impacting education, for instance through a new financial austerity for individuals and for education systems, will continue in the immediate aftermath.

Despite these obvious challenges, it is not a foregone conclusion that we should accept these terrible education losses and their dire outcomes as destiny. It is likely that programs can be developed and implemented to mitigate and revert the education losses, and perhaps even to address preexisting education challenges as we seek to ‘build back better’ as part of the response to the pandemic. To do this, governments could rely on the unprecedented social mobilization around education and on the innovation dividend that was generated to sustain education during the pandemic, on the extraordinary efforts and collaborations among parents, teachers, education administrators, as well as across the public and private sectors, levels of government, and nations. If there was ever a time when collective leadership was necessary, indeed essential, in education, this is it. We conclude this book in the hope that it contributes to that process of leading together, from all corners of the world, so we can build back better and restore opportunities for children and youth to gain the skills to build a more inclusive and sustainable world.

## Reference

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**Fernando M. Reimers** is the Ford Foundation Professor of the Practice of International Education and Director of the Global Education Innovation Initiative and of the International Education Policy Masters Program at Harvard University. An expert in the field of Global Education, his research and teaching focus on understanding how to educate children and youth so they can thrive in the 21st century. He is a member of UNESCO’s high-level commission on the Futures of Education.

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