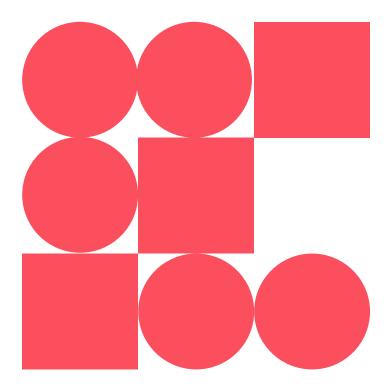# Educational Practices Series

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Education and Covid-19: Recovering from the shock created by the pandemic and building back better

by Fernando M. Reimers

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About the Series

The Series was started in 2000, as a joint venture between the International Academy of Education (IAE) and the International Bureau of Education (IBE). So far 34 booklets have been published in English and many of them have been translated in several other languages. The success of the Series shows that the booklets meet a need for practically relevant research-based information in education.

The series is also a result of the IBE's efforts to establish a global partnership that recognizes the role of knowledge brokerage as a key mechanism for improving the substantive access of policymakers and diverse practitioners to cutting-edge knowledge. Increased access to relevant knowledge can also inform education practitioners, policymakers and governments how this knowledge can help address urgent international concerns, including but not limited to curriculum, teaching, learning, assessment, migration, conflict, employment and equitable development.

Governments need to ensure that their education systems meet their core and indisputable mandate, which is to promote learning and, ultimately, to produce effective lifelong learners. With the aggressive pace of contextual change in 21st century, lifelong learning is a critical source of adaptability, agility to adapt, and the resilience required to meet challenges and opportunities. Yet, for many countries around the world, effective facilitation of learning remains a daunting challenge. Learning outcomes remain poor and inequitable. Intolerably high proportions of learners fail to acquire prerequisite competences for lifelong learning such as sustainable literacy, digital literacy, critical thinking, communication, problem solving, as well as competences for employability and for life. Systems' failure to facilitate learning co-exists with impressive advancements in education research, driven by research from diverse fields, including the sciences of learning, particularly the neuroscience of learning, and advancements in technology.

The IBE's knowledge brokerage initiative seeks to close the gap between scientific knowledge on learning and its application in education policies and practice. It is driven by the conviction that a deeper understanding of learning should improve teaching, learning, assessment, and policies on lifelong learning. To effectively envision and guide required improvements, policymakers and practitioners must be fully cognizant of the momentous dialogue with research.

The IBE recognizes the advancements already made, but also that there is still much more work to be done. This can only be achieved through solid partnerships and a collaborative commitment to building on previous lessons learned and continued knowledge sharing.

The Educational Practices booklets are illustrative of these ongoing efforts, by both the International Academy of Education and the International Bureau of Education, to inform education policymakers and practitioners on the latest research, so they can better make decisions and interventions related to curriculum development, teaching, learning and assessment.

29. Accountable talk: Instructional dialogue that builds the mind *by Lauren B. Resnick, Christa S. C. Asterham, and Sherice N. Clarke.*
30. Proportional reasoning *by Wim Van Dooren, Xenia Vamvakoussi, and Lieven Verschaffel.*
31. Math anxiety *by Denes Szűcs and Irene Mammarella.*
32. Philosophy for children *by Keith J Topping, Steve Trickey, and Paul Cleghorn.*
33. Teaching students how to learn *by Stella Vosniadou, Michael J. Lawson, Helen Stephenson, and Erin Bodner.*

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Acknowledgements

Introduction

The Covid-19 pandemic shocked schools and education systems around the world, affecting educational opportunity. For many students, the pandemic resulted in the loss of knowledge, skills, and previously mastered subject matter. Additionally, many students became disengaged with school, and in some countries the dropout levels rose. These effects were especially pronounced among disadvantaged students, which led to increases in educational inequality within nations. The effects were also more pronounced in the Global South, which led to increases in educational inequality among nations. These education losses will likely limit opportunities for individuals and nations. Hanushek & Woessman (2020) have estimated a decrease of 3% in lifetime income for students resulting from the learning losses caused by the pandemic.

These education losses were the result of the health, economic, and social effects of the pandemic, as well as the result of direct effects of the pandemic on educational institutions. Outside of schools, the pandemic took a toll on the physical and mental health of students, families, and the close relatives of those who were infected. It was economically devastating for millions worldwide, slowing the activity of global economies, increasing unemployment, and resulting in the closing of businesses and the reduced demand for goods and services during total or partial lockdowns to contain the spread of the virus. The measures limiting in-person meetings and travel undermined the functioning of various institutions and human well-being.

Moreover, the economic impact of the pandemic spilled over into the education sector. This negatively impacted the opportunity and disposition of students to learn and of teachers to teach, and limited what support both students and teachers received. As part of the social distancing measures adopted to curb the spread of the virus, education authorities suspended in-person instruction. In much of the world, schools were among the first institutions to close and the last ones to reopen, causing considerable disruption to opportunity to learn. Across 33 OECD countries, the average length of school closure was 70 days, with considerable differences across countries in the duration of closures—ranging from 20 days in Denmark and Germany, to over 150 days in Colombia and Costa Rica (OECD, 2021). School closures were longer in countries where students had lower levels of educational performance, as measured via comparative assessments such as PISA (OECD, 2021). In these contexts, teachers and education administrators were forced to innovate to continue educating amidst

the pandemic-caused disruptions, and to recover the learning loss that resulted from the deficiencies in the alternative educational channels quickly set up to educate remotely.

Although the net effect of the pandemic on education was negative, there were also some positive impacts. Importantly, educators developed a variety of innovations to sustain educational opportunity during the lockdown period. Emerging research on these innovations is contributing valuable knowledge about the prospects, and the limitations, of digital education strategies, and about the conditions that supported such teacher-led innovation and effective use of digi-pedagogies. It should be recognized, however, that the digital alternatives created during the pandemic were largely improvised—they were not the result of careful planning and design, and, to date, researchers have documented or studied few of them. Considerable differences exist across countries regarding the effectiveness of remote-education strategies, and within countries in how students from different social backgrounds were and are able to engage with those strategies (Reimers, 2021).

This booklet draws on research-based knowledge generated during the Covid-19 crisis and on previous research on germane topics, to suggest a framework that supports the development of contextually relevant educational strategies to teach during and after the pandemic. The booklet is addressed to education administrators at the school and system level. It was written with the acknowledgment that the pandemic is still ongoing in much of the world, and that interruptions to education in many parts of the world are likely to continue through 2022, and perhaps beyond.

The booklet focuses entirely on education. It does not address health or other policy responses to the pandemic—although obviously the pandemic is, at the root, a public health crisis that has triggered many economic, social, and educational consequences. An appropriate government response should be coherent and multisectoral, so that there is good coordination among various sectoral components of the response.

For instance, vaccinating the population is a critical step in controlling the spread of the virus. Once people within education systems are largely vaccinated—including teachers, staff, students, and parents— there will be fewer blows to educational opportunity. Similarly, the pandemic has had a devastating economic impact on the poor, and an appropriate government response should seek to stimulate economic activity and job growth, and to transfer income to and address the food insecurity of those who have been most impacted. Some of the

educational consequences of the pandemic are the result of those health or economic shocks and of less-effective government responses to mitigate them. These key noneducational elements of pandemic recovery are not the focus of this booklet, however; for the most part, they involve decisions that are not within the jurisdiction of education authorities, who are the audience for this publication.

Furthermore, some forecasts indicate that Covid-19 will continue to mutate in the large pockets of unvaccinated populations. According to these predictions, we will have to adjust to living with the virus for the foreseeable future, with possible periodic outbreaks of mutations (Osterhom & Olshaker, 2021). Furthermore, a recent report of an independent task force of the G20 urges preparedness for future pandemics: "Scaling up pandemic preparedness cannot wait until Covid-19 is over. The threat of future pandemics is already with us. The world faces the clear and present danger of more frequent and more lethal infectious disease outbreaks. The current pandemic was not a black swan event. Indeed, it may ultimately be seen as a dress rehearsal for the next pandemic, which could come at any time, in the next decade or even in the next year, and could be even more profoundly damaging to human security" (G20 High Level Independent Panel, 2021).

Because future outbreaks are possible even in education systems where in-person instruction has resumed, it is essential to build the resiliency of education systems. This way, educators can continue to teach during future outbreaks and in the case of other emergencies that disrupt in-person instruction.

Additionally, the pandemic especially shocked ineffective and unequal education systems. While the search for ways to continue to educate during the pandemic put many of the efforts to address these preexisting challenges on hold, this latter task cannot wait. In fact, given the pandemic's disproportionate educational costs to the children of the poor, addressing these preexisting challenges is even more necessary now—this is what the term "building back better" refers to.

These scenarios of the future suggest that the priorities for education policymakers vis-a-vis Covid-19 involve three goals: improve the effectiveness of education strategies during the current outbreak, recover and rebuild educational opportunity after the outbreak, and build the resiliency of the education system to function during future outbreaks. The actions aligned with these three broad goals are similar to each other, although the specific activities may vary depending on which goal one is pursuing. Figure 1 summarizes these goals and the actions to advance them.

Improve the effectiveness of education strategies during the current outbreak

Assess how the context has changed for students, families, teachers, communities, and for the education delivery system.

Develop a strategy to teach during the outbreak or to recover from one.

Increase capacity of schools, teachers, school leaders, students, families and the system.

Recover and rebuild educational opportunity after the outbreak

Assess how the context has changed for students, families, teachers, communities, and for the education delivery system.

Develop a strategy to teach during the outbreak or to recover from one.

Increase capacity of schools, teachers, school leaders, students, families and the system.

Build the resiliency of the education system to function during future outbreaks

Assess how the context has changed for students, families, teachers, communities, and for the education delivery system.

Develop a strategy to teach during the outbreak or to recover from one.

Increase capacity of schools, teachers, school leaders, students, families and the system.

Figure 1. Goals and actions to respond to the education shock of the pandemic

These activities can be structured in three main pillars:

> I. Assess how the context has changed for students, families, teachers, communities, and the education delivery system.

> II. Develop a strategy to teach during the outbreak or to recover from one.

> III. Increase the capacity of schools, teachers, school leaders, students, families, and the education system.

Each of the three pillars, in turn, involves a series of interdependent actions. Figure 2 summarizes the activities that each pillar of an education response calls for.

Assess changes in context

1. Student well-being and learning readiness.

2. Student access and engagement.

3. Teacher and staff well-being and teaching readiness.

4. Communities. Poverty and inequality.

5. Operation of the education system.

Develop a blended education strategy

1. Commit to supporting all learners.

2. Develop a delivery platform that balances in-person with remote learning and allows personalization and differentiation.

3. Prioritize the curriculum. Focus on competencies and on educating the whole child.

4. Accelerate learning and personalize.

5. Support mental health and emotional well-being.

6. Assess innovations which have taken place.

7. Integrate services (health, nutrition).

Increase capacity

1. Develop the capacity of schools. Align roles and responsibilities of school staff so they support a holistic approach to student development.

2. Build teachers', school leaders', and staff's capacity. Teacher professional development. Learning communities.

3. Build partnership.

4. Communicate with parents and develop parenting skills.

5. Build school networks.

Figure 2. Three pillars of an education strategy

It is critical that there is coherence and alignment between these goals and the actions that the three pillars in an education response entail. This coherence will generate the necessary synergies to support systemic improvement at scale. A fragmented or siloed approach, for instance, will be insufficient. Likewise, educational methods that are not based on a comprehensive assessment of changes produced by the pandemic are likely to be insufficient and to excessively burden already stretched delivery systems.

The rest of this document examines the actions to be considered within these three pillars. I have structured the document in three sections, one focusing on each pillar.

I. Assess both how the context has changed and the needs such changes have created

To develop an effective strategy to educate students during and after the pandemic, educators and policymakers must ground it in the characteristics of the local context. That is, they must base it in a specific understanding of how the pandemic influences the lives of students, their families, teachers, school staff, the communities where they live, and the ability of the education system to carry out core functions. The first step, then, is to take stock of those changes.

Because the pandemic has had different effects on various populations of students and on individual schools, one must base the identification of specific needs on a localized assessment of impacts on children and families. Creating a localized picture of these educational needs does not mean that local authorities must fend for themselves in finding and implementing solutions; on the contrary, national and regional governments have a responsibility to provide differentiated support to localities and schools in order to ensure equity in education outcomes. However, they must do this in service of supporting locally identified needs and strategies. The absence of a local focus would make a response irrelevant, while the absence of a compensatory role for national and regional governments would exacerbate the already unequal educational effects of the pandemic.

In what follows, I describe five principles for assessing how the educational context has changed as a result of the shocks induced by the pandemic. For each principle, I give a short description, followed by the evidence supporting the principle and by an operational description exemplifying the actions that enact the principle. Each section then provides a series of suggested readings, for which I provide the full citation at the end of the booklet.

1. Assess student well-being and disposition to learn

The principle

Support students' well-being and their disposition to learn. Because the effects of the pandemic on students differ across localities, one should base strategy on localized knowledge of how the health, economic, and social disruptions have impacted the well-being of vulnerable children—for example, creating food insecurity, diminishing family income, increasing domestic violence, increasing depression or other effects on mental health and on the emotional lives of students.

The evidence

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. They focused on participants in their programs, other populations of interest, and the public. The survey results reported violence at home in one third of the households—with the program participants being predominantly vulnerable children and families. 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, which was 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; 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).

In addition, learning loss during the pandemic—which has been uneven across different populations—requires that schools and teachers assess the levels of knowledge and skill of students as they reenter school. This allows educators to plan curricula aligned to those levels and to strategize appropriate differentiated methods to support students. A recent review of research on learning loss during the pandemic identified only eight studies, all focusing on OECD countries that 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. However, they also document heterogeneous learning-effects from closures according to school subjects and education levels (Donelly & Patrinos, 2021).

While the lack of reliable assessments for learning loss to date prevents 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 language 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 language. This is, in part, a result of increases in inequality between schools (the percentage of inequality in student achievement due to differences between schools increased by 7% for math and 18% for language). 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, one of which focused on higher education, finds learning loss also in the Netherlands, the United States, Australia, and Germany. However, the amount of learning loss is lower for these countries than as reported 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, p. 149). These 7 out of 8 studies identifying 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 (Donnelly & Patrinos, 2021, p. 149). 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.

A study of student skills in fifth, ninth, and twelfth grades in Sao Paulo public state schools (excluding municipal and private schools), conducted at the beginning of the 2021 school year (March), showed that fifth graders have lower levels of mathematical knowledge than they did when they finished third grade in 2019. While fifth graders have higher levels of reading comprehension than they did in third grade in 2019, those levels are significantly

lower than those of fifth graders in 2019. There are also losses, albeit lower, for ninth and twelfth graders, but one should interpret this in a context of ongoing improvements in student skills at those levels, starting from very low levels (CAEd/UFJF, 2021).

There is a well-developed body of research on the importance of student well-being for educational success. Willms has developed a framework to assess student well-being based on a synthesis of that research, which has been used to design surveys administered to students that provide valuable information to teachers throughout the school year (Willms, 2020).

What does it look like in practice?

At a system level: conduct a survey on student well-being at periodic intervals and use these results to develop an appropriate response. The survey could focus on students and on their parents, and it could be based on small representative samples.

At a classroom level: conduct daily check-ins with students, in which teachers ask each student, "How is it going?" At a classroom and school level, institutionalize periodic check-in surveys of students' sense of well-being and belonging, and provide results to teachers and discuss them in teacher meetings.

Suggested readings: Anderson, 2021; CAEd/UFJF, 2021; Donelly & Patrinos, 2021; Maldonado & De Witte, 2020; Reimers, 2021; Reimers & Schleicher, 2020a; Ritz et al., 2020; UNESCO, UNICEF & World Bank, 2020; Willms, 2020.

2. Assess student access and engagement. Identify children who have dropped out.

The principle

The return to in-person instruction must prioritize ascertaining which students have disengaged from or left school entirely and make every effort to reengage them. One of the imperatives during remote learning is to monitor student engagement in order to undertake specific efforts to maintain students engaged with schooling.

The evidence

As students fail to learn from the remote arrangements, and as other demands crowd out time for schoolwork, engagement with remote schooling becomes less regular. This leads some students to completely disengage. Disengagement further contributes to learning loss and to eventual dropout from school.

Several studies report that consistent engagement with remote educational platforms has been challenging for a considerable number of students, because of which their motivation to learn and well-being have suffered (Bellei et al., 2021; Cardenas et al., 2021; Kosaretsky et al., 2021; Soudien et al., 2021; Hamilton & Ercikan, 2021).

In Uruguay, for example, a country which launched an ambitious national program to promote digitalization of education in 2007, a recent survey administered to a nationally representative sample of students in grades 3 and 6 shows significant increases in school dropout, which are considerably higher for students with higher levels of aggregate economic and cultural disadvantage. The percentage of students who dropped out of school during the school year increased from 0.9% in 2017 to 2.8% in 2020. There were also considerable increases in the number of students who did not attend school on the day in which students' knowledge was assessed, from 5.9% in 2017 to 9.4% in 2020, and increases in the number of children who were not given the assessment because they were students with special needs, from 2.4% in 2017 to 9.4% in 2020.

These changes decreased the percentage of students who took the assessment from 90.8% in 2017 to 78.4% in 2020, perhaps a proxy for

the percentage of students deemed to have had opportunities to learn during both years (INEED, 2021). In addition, in 2020, the percentage of students who dropped out was greater in schools with higher average levels of socioeconomic and cultural disadvantage; whereas only 0.7% of the students in the 22% of the schools with the highest average levels of socioeconomic and cultural advantage dropped out, the figure increases to 2% for the students in the next 20% of the schools of greatest economic and cultural advantage, 2.5% for students in the next 15% of the schools, 3.4% for the students in the next 22% of the schools, and 5.4% for the students in the 20% of the schools of greatest average levels of socioeconomic and cultural disadvantage (INEED, 2021, p. 24). The same study asked teachers to report how regularly their students attended. In the 22% of the schools with the highest levels of socioeconomic and cultural advantage, 95% of the teachers report that students attend school regularly, whereas in the 20% of the schools with the lowest levels of socioeconomic and cultural advantage, only 68% of the teachers report that students attend school regularly (INEED, 2021, p. 38).

What does it look like in practice?

Develop new indicators to assess student participation in a way that is appropriate to the modality of education in use. Obviously "school attendance" is meaningless when schools are not open, and is inadequate when only part of instruction takes place in person, instead participation should reflect participation in the modality made available, in person or remote. The use of remote platforms allows more accurate measures of engagement, such as time connected to the platform, materials downloaded or actual engaged time.

At system and school levels, analyze data in existing online platforms on student access and participation. Identify who, among the students enrolled, accesses the platform and how, and who does not. When schools have used other forms of remote learning, such as teacher outreach by phone or in-person delivery of printed materials, use records to identify both actual outreach to students and student engagement, when available.

At system and school levels, analyze student enrollment records to identify enrollment flows and dropouts.

At system and school levels, survey households to see which children are enrolled and actively engaged in school and learning.

At school and classroom levels, reach out to enrolled students to ascertain who is actively participating in school activities. Develop specific outreach mechanisms to the students who are not accessing the platform or who abandoned their studies. At the school level, a teacher task force could reach out to those students, and their families, who are not actively participating and have in practice dropped out. This task force could also engage volunteers, including young people, to reach out to parents in the neighborhood to identify children who have dropped out or are at high risk of doing so.

Suggested readings: Bellei et al., 2021; Cardenas et al., 2021; Kosaretsky et al., 2021; Soudien et al., 2021; Hamilton & Ercikan, 2021.

3. Assess teacher and staff well-being, teaching readiness, and provide support

The principle

Schools need to support teachers, administrators, and staff so that they are well prepared and emotionally disposed to support their students.

The evidence

The pandemic has impacted teachers' lives in similar ways to those of students and their families. In addition, teachers have had to meet many new demands to sustain education remotely, with insufficient preparation and support. Further, some of them have had to support the education of their own children as parents, or to meet other family demands resulting from the pandemic, while teaching remotely. These multiple pressures have diminished teacher well-being and caused justified concerns over teacher burnout and departure from the profession (Audrein et al., 2021; Hamilton & Ercikan, 2021).

Two of the major sources of stress for teachers were their inadequate prior preparation to teach remotely and the suboptimal conditions in which they and their students had to create the measures to continue learning remotely. In contexts where teachers were well supported for digi-pedagogies, the transition to remote teaching was relatively seamless (Lavonen & Salmela-Aro, 2021; Tan & Chua, 2021).

What does it look like in practice?

At the school and system levels, assess teachers' readiness for digital instruction and use this information to design appropriate professional development.

At the school and system levels, survey teachers on their well-being, help them recognize stress in themselves and learners, implement well-being programs such as mindfulness and physical exercise, and cultivate an ethic of care in the school.

Identify needs for teachers' professional development and support them in developing the skills to educate and support their students, especially the most vulnerable, remotely.

Suggested readings: Audrein et al., 2021; Hamilton & Ercikan, 2021; Lavonen & Salmela-Aro, 2021; Tan & Chua, 2021; UNICEF, 2021a.

4. Assess changes in context. Impact of the pandemic on communities. Poverty, inequality.

The principle

Assess how the context of the school community has changed because of the pandemic, and then examine the implications of these changes for education.

The evidence

The effects of the pandemic have varied across communities and localities, reflecting the social and economic conditions in those communities. These local effects include not just the virus's transmission but also the effects of the pandemic on poverty. The pandemic's health and economic effects have, in turn, accelerated or interacted with other community challenges.

There is robust evidence that the pandemic has augmented poverty and inequality as well as negatively influenced health and well-being (Reimers, 2021b). The World Bank had estimated that by March of 2021 the pandemic had augmented global poverty by 120 million people, mostly in low- and middle-income countries (Atanda & Cojocaru, 2021).

What does it look like in practice?

At the level of school communities, develop a profile of such community characteristics as poverty, inequality, health, and social inclusion as shaped by the pandemic, integrating existing sociodemographic data from multiple sources.

Suggested readings: Atanda & Cojocaru, 2021; Reimers, 2021b.

5. Assess the operation of the education system

The principle

Audit which functions of the education delivery system the pandemic has impacted or interrupted.

The evidence

The pandemic has created a new range of demands on schools. Social-distancing requirements and the financial burdens of the pandemic have had an impact on a range of functions essential to school operation. These span the system, from instruction to delivery of services located in the school—including nutrition programs, mental health programs, regular student assessments, supervisory visits, and professional development. A systematic audit of which functions the pandemic has impacted is essential to developing strategies for continuity or recovery.

For instance, it is essential to audit whether there is an effective delivery chain to create educational opportunity that reaches all students. As mentioned earlier, in Mexico, the national strategy of remote education failed to reach the most disadvantaged students because they lacked access to TV or to computers. Even in Uruguay, which launched a program to provide digital education opportunities to all students in 2007, not all of them had access to connectivity. An assessment conducted in 2020, for example, reveals that among students in 3rd grade, 43% of them had their own computer, and an additional 46% had access to a shared computer, 10% had both their own computer and access to a shared computer, whereas 18% had no access to a computer. For students in 6th grade access was greater, 49.5% had access to their own computer, 12% had access to a shared computer, 27.9% had both access to their own computer and to a shared computer, but 10.5% had no access at all (INEED, 2021, p. 47). Among students in the 6th grade, lack of access to a computer was three times greater (15%) for students in the 20% of the schools with lowest levels of socioeconomic and cultural advantages, than in the 22% of the schools with the highest levels of socioeconomic and cultural advantages, where only 5% of the students had no access to a computer (INEED, 2021, p. 47).

Because Covid-19-related public health and economic emergencies have put new financial demands on governments, these have

crowded out public funding for education. This has limited the ability of governments to provide supports to remote strategies, including funding access to connectivity and devices for all students or professional development for teachers. Similarly, physical-distancing requirements impeded administration of national assessments of student knowledge and skills, and placement of teacher candidates in practice sites.

Overwhelmed by rushing to meet the new demands created by the pandemic, education systems have simultaneously had to address the ongoing demands of system administration. Yet, physical-distancing requirements, the health impact on staff, and resource constraints have greatly diminished the functioning of those ongoing systems (Reimers & Schleicher, 2020b).

What does it look like in practice?

Conduct a survey of key staff each time there is a disruption to operations, to assess the pandemic's impact on the operation of such key functions at the school and system levels as curriculum delivery, assessments, teacher professional development, teacher appointments and promotions, delivery of school meals and other student services, etc.

Educational administrations are often unable to implement policies with agility because of excessive complexity, inadequate coordination across administrative levels and norms and regulations that slow down execution, in a nutshell the absence of a delivery chain. Addressing these constraints and ensuring a working delivery chain is critically important at a time when swift action is necessary.

Suggested readings: Reimers & Schleicher, 2020b.

Summary

Because the pandemic has affected different populations and school systems differently, the first step in devising an appropriate education response is to ascertain the precise nature of those effects on students, communities, teachers, and the education delivery system itself.

This can be done with relatively simple data-collection tools and protocols at the classroom, school, and system levels. Some of these protocols can support new routines, such as a daily check-in as students begin the school day, in which teachers ask each student to share how they are doing. The teacher should then use this information to shape appropriate responses, to support student well-being and readiness to learn. The overarching theme of this booklet is the need to have integrated and coherently aligned actions that are based on an understanding of the context, and then to have activities that support the capacity to carry out those actions.

We now turn to the analysis of which actions should be part of an education strategy.

II. Develop a strategy at the school or system level to teach during the outbreak or to recover from it

We must develop new strategies based on an informed understanding of the impact the pandemic has had on the lives of students, teachers, families, and the operation of schools. Schools and education systems must identify and prioritize students' education needs that they plan to meet, and develop strategies to do so. A commitment to educating all learners must guide such strategies. These plans should identify the means to deliver education, including a balance of in-person and remote instruction, and to differentiate among students. Because the pandemic may have diminished the capacity to deliver education, it may be necessary to reprioritize curricula.

The strategy should provide opportunities for learning recovery for the students who experienced the greatest learning loss and disengagement. The strategy should also support student well-being, considering the effects of the stress and trauma they experienced because of the pandemic, in some cases over protracted periods. It should build on strengths and innovations generated during the pandemic and seek to integrate the provision of various services that support students holistically.

1. Commit to supporting all learners

The principle

Use as a criterion to guide education policy ensuring equal educational outcomes for all students. Develop a framework of what "educational opportunity" means in contexts with considerable remote instruction, and monitor the system in order to identify gaps across classes of students—girls vs. boys, poor vs. non-poor, rural vs. urban, students with disabilities vs. students without disabilities, etc. Prioritize actions that close those gaps across students.

The evidence

While educational opportunity is normally a result of the interaction between education and students' existing social advantages, socioeconomic factors are accentuated during pandemics, which place exaggerated burdens on the poor. For this reason, it is especially important that educational institutions prioritize equity in guiding strategy.

This means systematically identifying groups and classes of students whom the pandemic has affected the most and/or who have the most disadvantages. This strategy ensures that schools can provide alternative educational means to the most at-risk groups. In societies with more limited forms of social protection, the pandemic places disproportionate burdens on the poor (Anderson, 2021; Bellei et al., 2021; Cardenas, 2021; Hamilton & Ercikan, 2021; Soudien et al., 2021). In some social settings, these burdens are compounded for girls and women, whom the society expects to take on a disproportionate share of the costs of adjustments during the pandemic, including the brunt of child or elder care (Ritz, 2020). The educational rights of students with disabilities merits special attention, as part of the commitment to supporting all learners. Some countries, such as Portugal, have adopted an explicit focus on maintaining educational opportunity for disadvantaged groups during the pandemic. Similarly, countries such as Japan and Singapore have concentrated resources on disadvantaged groups, providing computers and improving connectivity, and emphasizing educational continuity during remote instruction (Iwabuchi et al., 2021; Tan & Chua, 2021).

A survey administered to educational authorities in OECD countries at the beginning of 2021 showed that most countries prioritized in-person instruction for disadvantaged learners and offered remedial

approaches to close learning gaps. Three in five countries had developed specific measures to support disadvantaged students, and two in five countries also targeted immigrant students (OECD, 2021).

What does it look like in practice?

Develop a dashboard of key indicators for educational opportunity (access, engagement, learning, well-being), disaggregated for higher-risk groups, and systematically monitor indicators of opportunity. For every policy decision, ask, "What is the likely impact on each of the groups most at risk?'

Target resources to support education of the most disadvantaged; for instance, providing devices, connectivity, and free access to digital content and data (through Mobile Network Operators) to poor students.

Consult with learners with disabilities and their families to understand priorities and barriers to accessing and participating in education.

Ensure accessibility of learning materials and opportunities so students with disabilities can access platforms, content, resources, and experiences in accessible and appropriate formats on an equal basis with others.

Establish policies and allocate resources for the provision of reasonable accommodations (e.g., additional time to complete tasks, demonstration of learning in different ways, etc.) and assistive devices (e.g., screen reader software, adapted seating, etc.) to facilitate learning for students with disabilities.

Build teacher capacity on inclusive teaching in line with the principles of Universal Design for Learning, to support the active participation of all learners.

Suggested readings: Accessible Digital Learning, 2021; Anderson, 2021; Bellei et al., 2021; Cardenas, 2021; Hamilton & Ercikan, 2021; Instituto Rodrigo Mendes, 2021; Iwabuchi et al., 2021; OECD, 2021; Soudien et al., 2021; Tan & Chua, 2021; UNICEF, 2021b; UNICEF, 2021c.

2. Develop a delivery platform that balances in-person with remote learning and allows personalization and differentiation

The principle

Transform the education delivery system from primarily in-person to blended remote and in-person. This will extend learning time and provide students with opportunities for independent and personalized learning.

While platforms that provide the greatest interactivity are superior in their ability to foster higher-order skills, those who make decisions around these systems should also consider inequities in access. To the greatest possible extent, schools should provide all students with devices and connectivity that enable them to use broadband online platforms over media that allows more limited forms of interaction such as radio, television, or Whatsapp.

The evidence

Among the many ways the pandemic limited educational opportunity, social-distancing measures limited in-person instruction. This resulted in school closures (UNESCO, UNICEF, & World Bank, 2020). In the early stages of the outbreak, parents and teachers were apprehensive about meeting in schools, although there is limited evidence that schools contribute to the spread of the virus. Schools' contribution in this regard was significantly less than that of workplaces or meetings in other institutions, and there is no evidence that health outcomes justified the protracted school closures in some countries. According to an OECD analysis of data on school closures during 2020, the duration of school closures is unrelated to infection rates, even after controlling for income per capita (OECD, 2021).

Furthermore, emerging evidence about the limitations of remote instruction in sustaining student engagement and supporting learning underscores the importance of providing students at least some opportunity for in-person instruction—if necessary, by staggering student attendance in groups, and by prioritizing those students most in need of in-person support (including younger children and students with special needs) (Anderson, 2021). Most OECD countries report having instituted this prioritization (OECD, 2021).

Simultaneously, the reason many arrangements for remote instruction have failed is because a robust remote-delivery system had not been developed at the time of the pandemic. Such a system would include not only connectivity and devices but also the skills required to teach and to learn using them. Countries that had supported the development of digi-pedagogies, such as Finland and Singapore, had less traumatic transitions to remote learning (Lavonen & Salmela-Aro, 2021; Tan & Chua, 2021).

Schools used multiple alternative delivery systems during the pandemic—from providing books and workbooks to students, to radio and television education, to internet-based education (Reimers & Schleicher, 2020b). The ways they used the internet also varied, from serving primarily as a digital catalog or platform, to the medium for delivering lectures, to more interactive forms of teaching and learning.

The choice of delivery platform involves more than the physical medium used to facilitate interactivity between learners, teachers, and content. It also involves provisions for the nature of those interactions, and how such platforms will be used. In other words, educators must develop clarity about the instructional tasks that will take place in the platform. For the design of online instruction (Anderson, 2021), they should use sound principles of design for instructional tasks, such as those that Anderson and Pesikan (2017) summarize.

Mexico's experience during the pandemic offers valuable lessons on the need to ensure student access to the chosen platform. While that country chose a TV-based strategy for educational continuity— predicated on the almost universal accessibility to television and on a long tradition of the Ministry of Education's production of educational TV (Telesecundaria)—an agency of the Mexican government conducted a survey in June 2020 that showed that 57.3% of the students lacked access to a computer, television, radio, or cell phone during the emergency. Furthermore, 52.8% of the strategies required materials that students did not have in their homes (MEJOREDU, 2020).

In the same survey, 51.4% of students reported that the activities online, on the TV, and on radio programs were "boring" (MEJOREDU, 2020). 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 their completed work, lack of knowledge about their successes or mistakes in the activities, and insufficient understanding of what they were doing. As a result, less learning took place, and students developed negative self-perceptions regarding their own ability to

pass on to 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 simply reviewed previously taught content (MEJOREDU, 2020).

What does it look like in practice?

Develop a multimedia platform that integrates several functionalities: distribution of digital instructional resources for students, parents, and teachers; cloud-based applications, virtual classrooms, videoconferencing, learning-management systems, streaming capabilities, and tools that support interaction among students, among students and teachers and among teachers; and devices and connectivity for schools. To the greatest extent possible, provide connectivity and devices for all students who require them. This may entail developing agreements with EdTech and digital communication providers. The delivery structure of education should remain primarily in-person, complemented with digital extensions for online learning.

A balanced strategy that integrates the use of in-person instruction with digital instruction has several advantages. Namely, it extends learning time and provides students the unique benefits of each medium while allowing the greatest versatility in adjusting to changes in context that may otherwise limit opportunities for in-person instruction. During periods in which there are no restrictions to meeting in-person, it still makes sense to incorporate digital instruction. This supports personalization, extends learning time, and cultivates students' capacities for digital learning. This expands students' range of twenty-first century skills and provides a foundation for lifelong learning. Should additional physical distancing become necessary, it will be easier to increase the proportion of instruction that takes place in a digital platform, while retaining some in-person instruction for the unique social and emotional benefits that it provides students.

Multimedia platforms can include instructional activities and resources for students to independently follow along with, which supplement in-classroom curricula. This allows students to engage independently with structured lessons and activities as well as gamified learning apps.

Suggested readings: Anderson, 2021; Anderson & Pesikan, 2017; Lavonen & Salmela-Aro, 2021; MEJOREDU, 2020; OECD, 2021; Reimers & Schleicher, 2020b; Tan & Chua, 2021; UNESCO, UNICEF & World Bank, 2020.

3. Prioritize the curriculum. Focus on competencies and on educating the whole child.

The principle

Prioritize the curriculum: focus on developing learning outcomes and competencies rather than on content to be delivered. Address cognitive, interpersonal, and intrapersonal competencies, and active learning.

The evidence

A recent analysis of approaches to addressing learning loss identifies a focus on "remediation" or "learning recovery". Research on remediation shows that it is ineffective; in contrast, accelerated-education models involve prioritizing the curriculum, focusing on the basics, and reducing the amount of time devoted to review (Anderson, 2021).

What does it look like in practice?

At the school or system level, revisit the competencies that students are expected to have gained by the end of each grade, and focus on supporting the development of those competencies (rather than simply "covering the curriculum"). This may require streamlining the curriculum and prioritizing core competencies.

At the school level, assess children as they come back into school and group children by learning level rather than by grade.

Suggested reading: Anderson, 2021.

4. Accelerate learning and personalize

The principle

Design new curriculum and instructional activities that prioritize accelerating learning. Support personalization with extended learning time and individualized tutoring.

The evidence

Acceleration is not remediation. Rather, acceleration calls for focusing on essential competencies and spending less time on review, thus helping students progress more efficiently (Anderson, 2021).

Research evidence shows that accelerated-education approaches produce greater learning gains among disadvantaged students than remedial approaches, and that it is possible to organize large networks of schools around accelerated approaches (Levin, 2005).

The predominant approach of most education systems in OECD countries was to address learning losses with remediation rather than with accelerated curricula (OECD, 2021).

What does it look like in practice?

Select an approach that supports every student in developing the prioritized competencies through accelerated programs and tutoring.

Use assessments of student knowledge and skills to design personalized instructional strategies that teach at the right level— for example, by creating clusters of students within the same grade. Use learning guides—preferably online—to provide students with frequent opportunities for formative feedback. This supports independent learning. Digital applications can support individualized learning in basic literacies as well as in academic subjects. Digital devices—ones that do not require continuous connectivity—can provide students with access to such activities as readings, books, games, and videos, organized into learning sequences in a highly structured curriculum. These methods allow differentiation, with ongoing evaluations for check-in and opportunities for review.

Design instructional tasks that foster a high level of cognitive activation, engaging students in collaborative problem-based learning. This allows students to tackle challenging problems for extended periods.

Suggested readings: Anderson, 2021; Levin, 2005; OECD, 2021.

5. Support student mental health and emotional well-being

The principle

Reengage students in order to support their mental health and well-being.

Integrate attention to the emotional development of students across the curriculum rather than address it as a silo in the curriculum.

The evidence

The various effects of the pandemic, including the extended periods of separation from peers and friends caused by social-distancing measures, have traumatized many students. These measures may have long-term impacts on students' well-being, impacting focus, concentration, and the dedication necessary for learning (MEJOREDU, 2020; Ritz, 2020).

While there is still insufficient information regarding the global mental health impact of the pandemic, solid evidence suggests that school interventions can support student well-being. Thus, attention to mental health is indispensable for student learning in all domains (Aspen Institute, 2019; Pekrun, 2014).

What does it look like in practice?

Adopt a socioemotional learning curriculum that focuses explicitly on such competencies as emotional awareness, empathy, stress management, responsible decision-making, positive self-concept, and self-care. Introduce explicit instruction and discussion of these competencies by allocating dedicated time each week to their development. Integrate these competencies across academic and nonacademic curricula.

Provide teachers with opportunities to develop competencies to support student well-being.

At the school level, create opportunities to review students holistically. For example, create student portfolios that all teachers and staff of students have access to and hold periodic staff meetings to discuss the progress of each student on a range of dimensions—academic, personal, and social.

Suggested readings: Aspen Institute, 2019; Pekrun, 2014.

6. Assess the effectiveness of innovations that have taken place

The principle

To support innovation and improvement in the educational sector post-pandemic, and to study the successes and failures of policies and practices that were implemented during Covid-19.

The evidence

Despite the many losses caused by the pandemic, educators and school communities have created innovations to sustain educational opportunity (Reimers & Schleicher, 2020b). These innovations include new pedagogical approaches developed by teachers, new forms of collaboration among teachers, new forms of organization and management which made it possible to develop alternative ways to educate and to course correct based on feedback.

Building on this innovation dividend is consistent with Appreciative Inquiry, a strength-based approach to organizational change (Cooperrider, Whitney, & Stavros, 2004).

What does it look like in practice?

At the school level, create periodic meetings to study and reflect on the educational innovations that took place. Develop teacher capacity to assess what competencies were gained by students as a result of the alternative approaches to education deployed during the pandemic. Use the analysis and learning in these meetings to accelerate curricula development and to support the holistic development of all students. Integrate peer-to-peer learning across different schools, thus fostering a shared process of innovation and improvement.

Suggested readings: Cooperrider, Whitney, & Stavros, 2004; Reimers & Schleicher, 2020b.

7. Integrate services that support students (health, nutrition)

The principle

Support students and their families in accessing the health, nutrition, mental health, and social services essential for student learning.

The evidence

The conditions and care that students experience at home, their access to stable food sources, and their physical and psychological safety all influence students' lives. It is difficult to concentrate on schoolwork when hungry or when experiencing distress or violence at home. Schools often provide some of those services to support student well-being directly—for instance, by offering school meals or psychological services.

A variety of programs and approaches have attempted to provide students with integrated services, such as the Children's Harlem Zone in the United States (Croft & Whitehurst, 2010), priority action zones in France, and education action zones in England (Dickson & Power, 2001). A recent review of research demonstrates that integrated approaches to student support contribute to academic progress; improved attendance, effort, and engagement; higher academic achievement; reduced high school dropout rates; and better social and emotional outcomes (Wasser Gish, 2021).

What does it look like in practice?

At the system level, integrate databases with information on children and families from the various education, health and social protection agencies. In order to increase the response rate and the quality of the information obtained from surveys to families, minimize the number of surveys administered, coordinating across agencies so the same survey can meet the needs of various agencies.
At the school level, create periodic reviews for each child. These reviews should incorporate social workers, counselors, and other relevant individuals in a student's life. By mapping out a student's social support system, educators can ensure that all parts of student well-being are protected.

Create mechanisms to coordinate with other social service agencies, thus making certain that students can receive the medical, nutritional, and social supports they need.

Instruction in school can also foster integration between education, health, and well-being, such as when students gain knowledge that is relevant to maintaining their health or the public's health. Most recently, this has taken the form of knowledge related to Covid-19 and ways to mitigate its spread. Beyond the pandemic, schools should also assist students in fostering the life skills that will help them affirm their rights and negotiate healthy relationships outside of school.

Suggested readings: Croft & Whitehurst, 2010; Dickson & Power, 2001; Wasser Gish, 2021.

Summary

Based on a specific and factually informed understanding of the ways the pandemic has affected students, communities, and education systems, an education response should include actions guided by seven principles: 1) a commitment to supporting all learners; 2) the development of a blended delivery system with the capacity to seamlessly transition toward remote instruction, as necessary; 3) curricula that prioritize developing a breadth of competencies that support the whole child; 4) an accelerated approach to learning; 5) support for mental health and well-being; 6) appraisal of the innovation dividend generated by the response to the pandemic; and 7) greater integration across services to support students' cohesive development and education.

These seven principles draw on well-established and supported ideas in education, with the exception of the idea that a blended system should replace a traditional (non-remote) system depending primarily on in-person instruction. While this idea is more novel (primarily supported by research at the higher-education level), it is necessary as long as the pandemic continues to evolve and affect education systems. Furthermore, preparing students to learn online is a foundation for lifelong learning—in today's environment, strong digital skills are increasingly important for autonomy in learning. These seven principles should be integrated and reinforce one another. Educators should advance them with actions that are aligned across goals, rather than with siloed responses.

Taken together, these principles represent a tall order for most schools or education systems—indeed, a true call to arms to "build back better". The ability of systems to execute these goals will depend on the details and execution of implementation.

The capacity to successfully implement reform is so crucial that we cannot assume it or take it for granted: rather, we must intentionally develop it. In the next section, we turn to that third and crucial step of the education response to the pandemic.

III. Increase capacity

Helping students recover from the learning loss and trauma experienced during the pandemic—and building the resiliency of students, teachers, and school systems to overcome future disruptions—requires increasing the capacity of schools. This means both helping educators develop new knowledge and skills, and mobilizing other stakeholders who can help implement activities necessary for recovery.

We can enhance capacity in five main ways: 1) develop the skills of those working in schools; 2) align and reconfigure roles and responsibilities in schools, so they support an integrated view of student development; 3) build partnerships between schools and other institutions; 4) leverage parents and members of the community; and 5) create networks of schools.

1. Develop the capacity of schools. Align roles and responsibilities of school staff so they support a holistic approach to student development.

The principle

Support schools to become learning organizations, where professional collaboration results in high levels of success in supporting all students to learn.

The evidence

Solid and abundant research exists on the importance of system capacity in implementing change. Currently, most approaches to reform involve building organizational and teacher capacity (Ehren & Baxter, 2020; Fullan, 2010). Schools need the autonomy and the support to execute well the elements of the strategy outlined in this paper. Often, the structure of educational administration, with too many administrative layers and with excessive and dysfunctional regulatory frameworks, limits the capacity of the school to deliver. During the pandemic, a number of countries have seen very deficient coordination across various levels of government, and between education and public health authorities. These administrative constraints are a barrier to schools becoming learning organizations and to their ability to execute effective strategies to support learning during and after the crisis. At the same time, during the pandemic, in a number of contexts, there were innovative efforts of redesign of school supervision and management practices of higher administrative levels in service of supporting the capacity of schools, in effect turning a traditional form of administration from the top of the administrative hierarchy to the school on its head, placing the school at the center. These innovations, and the results they achieved, should be studied for the purpose of continuing with forms of administration that place the school at the center, and that map educational administration backward from the classroom and the school towards outer administrative levels continuously asking the question 'what should be done at this level in service of empowering teachers and school principals to do their best work supporting their students to thrive?'. This continuous process of analysis, reflection and change should become the new normal in order for schools to become learning organizations.

Learning organizations achieve greater levels of effectiveness. The research on schools as learning organizations highlights seven features that define them as such. They:

1) develop and share a vision centered on the learning of all students;

2) create and support continuous learning opportunities for all staff;

3) promote team learning and collaboration among staff;

4) establish a culture of inquiry, innovation, and exploration;

5) establish embedded systems for collecting and exchanging knowledge and learning;

6) learn with and from the external environment and larger learning system; and

7) model and cultivate learning leadership. (Kools & Stoll, 2016, p. 3)

What does it look like in practice?

Audit existing roles of school staff, and create or reconfigure roles as necessary to support the holistic development of students. For instance, give support to teachers to check in on the well-being of students and to encourage their emotional development. Specialized professionals, including mental health counselors and social workers, are also necessary for bringing expert knowledge to schools and supporting students' emotional development. Schools can build simple routines and protocols into the school day to focus on student well-being, such as daily check-ins with each student.
Audit the delivery chain of the education system, and the regulatory framework, and streamline regulations and administrative processes so that educational management supports appropriate school autonomy, and effective support and oversight in the implementation of policy.

Align policy responses across levels of government and between the education, health and public finance authorities. Without such alignment schools will be trapped in a limbo of contradictory regulations or starved of critical resources.

While the development of capacity involves making better use of existing financial resources, there are limits to what can be achieved without new resources. For example, providing all students with devices and connectivity requires significant financial resources, appropriate processes of acquisition and managing complex logistics

of implementation. Those resources need to be assured, along with a lean and effective delivery chain that can help provide that infrastructure for blended learning. Because there will likely be limits to the resources available to governments, in part because the extraordinary demands created by the pandemic, schools and education systems might be able to increase their institutional and financial capacity building partnerships with organizations of civil society. Effective leveraging of those partnerships requires clear identification of what students and schools need, and integrate such contributions as part of the strategy and of the delivery chain.

A clear communication strategy on the part of education authorities is essential in supporting an effective delivery chain and strategy. The elements of the strategy need to be well understood by all stakeholders in the education system, and there should be little room for ambiguity. For example, if the policy is that schools should return to in person instruction, a communication strategy should make this clear and aim at building trust among parents, teachers and staff on the scientific foundation of the policy, and on the benefits and costs and the mechanisms to minimize risks of infection. Communication campaigns should communicate to students, parents, teachers and society more generally the consequences to students of missing school, the benefits of attending and the low risks of infections in school.

Alignment across various levels of administration in education and across sectors, for instance with public health, is critical to an effective communication strategy.

Schools and education systems must continue to invest in developing the capacity for digital education, this includes infrastructure and digital pedagogies.

Suggested readings: Ehren & Baxter, 2020; Fullan, 2010; Kools & Stoll, 2016.

2. Build teacher, school leaders, and staff capacity. Teacher professional development. Learning communities.

The principle

Provide teachers with the knowledge and skills necessary to support students holistically and to create effective remote curricula. Provide principals with opportunities to learn and support professional collaboration in their schools, thus resulting in organizational learning.

The evidence

Teacher professional development can change teaching practice in ways that result in greater levels of student learning (Timperley, 2008). However, much existing professional development is not effective. To be effective, the training should align professional development with the pedagogical skills and knowledge that schools expect teachers to have, and of the competencies that they expect students to develop. Teachers should also learn to assess student progress, so the teachers themselves can see whether their pedagogical practice is effective (Timperley, 2008).

Programs that help teachers develop the capacity to teach holistically focus on working with teams in schools, providing multiple opportunities for learning in school, integrating schools in networks, and expanding those networks' effectiveness by integrating them with organizations that provide expert knowledge (Reimers, 2020). During the pandemic, providing teachers with adequate professional development to teach remotely enabled many teachers to effectively transition to remote instruction (Lavonen & Salmela-Aro, 2021).

What does it look like in practice?

Support teachers in developing their skills for digi-pedagogy. Online programs for teacher professional development should integrate teachers in communities of practice across schools, where teachers have the ability to collaborate in addressing shared challenges.
Assess teachers' digital competencies, to help design programs of professional development that are based on the specific needs of teachers.

Support teachers in gaining the skills to implement accelerated and personalized curriculum, focused on the reprioritized competencies,

this includes developing teacher capacity to assess competencies and student progress towards developing competencies in a variety of domains.

Develop programs of teacher professional development that are school-based and created around teachers' needs—thus providing multiple forms of sustained learning over long periods of time, so teachers can engage in frequent cycles of learning, practice, reflection, and further learning.

Among the approaches that schools can adopt at their level are: 1) communities of practice and mentoring; 2) peer-to-peer learning; 3) collaborative experimentation; and 4) action research. Education authorities can also integrate schools into larger networks, where communication across schools is supported by technological innovations, universities, and specialized organizations that can bring external expertise as needed. These systems would be essential in providing teachers with entrée to collaborative communities for peer support and in addressing shared pedagogical challenges.

Multimedia platforms can be critical resources in supporting professional development. They enable access to thematic professional communities, offer resources for teachers, curate lesson plans, and provide the instructional resources necessary to support curricula.

Suggested readings: Lavonen & Salmela-Aro, 2021; Reimers, 2020; Timperley, 2008.

3. Create partnerships between schools and other organizations

The principle

Create partnerships between schools and other organizations to expand the ability of schools to educate students holistically, by addressing their healthcare needs alongside educational goals. Partnerships can also augment the instructional capacity of schools: for example, partnerships with universities can give schools access to students who can volunteer as tutors or teacher's aides to help to provide individualized academic support to students.

The evidence

During the pandemic, many education systems supported innovation to create forms of remote instruction. These forms often relied on partnerships with a variety of organizations, from education-technology organizations, to publishing companies, to telecommunication companies, to other organizations designed to support teacher professional development (Reimers & Schleicher, 2020b; Reimers & Marmolejo, 2021).

What does it look like in practice?

Based on the ways in which the pandemic impacts specific education systems, the relevant strategies and the resources to implement them will become more evident over time. System leaders and school principals can map local stakeholder groups and identify the assets they can contribute to the implementation of successful strategies. This will allow educational leaders to create consultative processes that invite such groups to participate in the design and implementation of more robust education systems, ones that are better enabled to address the crises created by the pandemic.

Suggested readings: Reimers & Schleicher, 2020b; Reimers & Marmolejo, 2021.

4. Communicate with parents and develop parenting skills.

The principle

Support parents so they develop skills to support remote education.

The evidence

There is abundant and compelling evidence on the role of parenting in supporting child development and school readiness, and on the power of parenting education to improve the effectiveness of parents (Brooks-Gunn & Markman, 2005; DeBord & Matta, 2002; Family Strengthening Policy Center, 2007).

What does it look like in practice?

Create and deliver high-quality programs to support parents so they can effectively foster the development of their children. For example, research has found structured early-education learning programs focused on foundational literacy and numeracy skills, as well as socioemotional development, to be effective. Schools can use mobile technologies to deliver those programs to parents.

Suggested readings: Brooks-Gunn & Markman, 2005; DeBord & Matta, 2002; Family Strengthening Policy Center, 2007.

5. Build school networks

The principle

Augment the capacity of schools, expand opportunities for collaborative learning and problem solving, and integrate schools into networks with other schools.

The evidence

Bryk and associates have developed an approach to school improvement based on the integration of schools into networks that can facilitate joint problem-solving and collaborative learning (Bryk et al., 2015).

During the pandemic, research found that many teachers collaborated with other teachers across school systems to improve remote-education strategies—these informal networks supported much innovation (Reimers & Schleicher, 2020b). A recent study demonstrates that many school systems and networks effectively partnered with universities to augment their approaches to remote instruction (Reimers & Marmolejo, 2021).

Formalizing collaboration among school networks can support the development of teacher capacity and can assist the strategy to recover learning loss and to strengthen

What does it look like in practice?

School leaders should seek to form joint networks of schools for the purposes of collaboration and of building teachers' capacity for digi-pedagogies. These networks can serve subsequently to address other mutual challenges, and to share resources and achieve economies of scale. Integrating other organizations, such as universities or nongovernmental education groups, could increase the ability of these networks to do their work.

Suggested readings: Bryk et al., 2015; Reimers & Schleicher, 2020b; Reimers & Marmolejo, 2021.

Summary

Despite the devastation from the Covid-19 pandemic, tremendous opportunity exists to "build back better" in education. This opportunity rests not on ideas, but on the implementation of those ideas; and implementation depends on developing system capacity and on financial resources. In that sense, an educational strategy is, at the core, an opportunity to develop system capacity.

Developing system capacity requires fostering and redesigning the capacity of schools, which in turn requires streamlining the administrative delivery chain of education bureaucracies. It also requires supporting the roles of educational professionals so that they can coherently advance the seven strategic principles outlined earlier in this booklet.

Improving capacity requires developing the capacity of teachers, school leaders, and staff. Schools may do this by building partnerships with other organizations, such as universities, or with specialized agencies with expertise for developing skills, instructional materials, and other resources.

Parent partnerships are especially critical in this rebuilding process. Parents have always had an essential role in supporting the students' development and education; however, their role becomes even more essential as, increasingly, remote instruction moves the schooling experience into the home.

Finally, we can augment capacity by regarding schools not simply as standalone organizations but as parts of networks that can share resources and knowledge, and can collaborate in devising solutions to existing challenges.

Clearly, while a coherent strategy intends to promote more efficient utilization of existing financial resources, it cannot be executed without financial resources. In other words, education systems cannot advance an effective education response to the pandemic based on good leadership and good management alone, they also need money to finance the strategy. While it is probably sensible to say that new resources should not be devoted to education systems in the crisis context created by the pandemic if there is no strategy, it would be foolish to starve systems of resources to execute sound strategies because the educational opportunities which are being lost as a result of the crisis created by Covid-19 will most assuredly translate into lost economic prosperity and means to reduce poverty and inequality, all of which would complicate already serious challenges with social

cohesion, stability and to the opportunities to support human flourishing and development.

The key message of this booklet: the three pillars of an educational response to the pandemic should be assessment, strategy, and capacity, with coherence between these pillars. It is this coherence that produces the interactions necessary to help build a system with greater levels of effectiveness and inclusion.

Conclusion

The Covid-19 pandemic shocked education systems, transforming the context of students and families, and creating broader social challenges. Education systems responded rapidly, using diverse approaches with mixed effectiveness. As the pandemic continues, education systems may experience further future shocks. Considering this, it is essential to increase the effectiveness of approaches to educate students differently.

Education during and after Covid-19 requires a coherent approach, which begins with taking stock of the pandemic's impact on students, communities, and educational systems. Identifying relevant strategies will define what, and how, systems teach in the future. This involves creating flexible blended systems that integrate in-person with remote instruction—potentially, with more instruction taking place in one or the other modality depending on the feasibility of congregating in schools.

Such strategies should focus on accelerating learning by prioritizing the curriculum, and on the education of the whole child. To implement such strategies, educators and policymakers must strengthen the capacity of schools, teachers, systems, students, and their families. This can be done through a variety of approaches—from improved teacher professional development, to building school networks, to supporting the transformation of schools into learning organizations.

References

Accessible Digital Learning. (2021). https://accessibledigitallearning.org/

Anderson, L., & Pesikan, A. (2017). *Task, teaching and learning: Improving the quality of education for economically disadvantaged students.* Educational Practices Series 27. International Academy of Education and UNESCO International Bureau of Education. http://www.ibe.unesco.org/en/news/task-teaching-and-learning-improving-quality-education-economically-disadvantaged-students

Anderson, L. (2021). Schooling interrupted: Educating children and youth in the COVID-19 era. *Center for Educational Policy Studies Journal, 11.*

Aspen Institute. (2019). *From a nation at risk to a nation at hope.* https://www.aspeninstitute.org/programs/national-commission-on-social-emotional-and-academic-development/

Atanda, K., & Cojocaru, A. (2021, March 31). *Shocks and vulnerability to poverty in middle-income countries.* World Bank Blogs. https://blogs.worldbank.org/developmenttalk/shocks-and-vulnerability-poverty-middle-income-countries

Audrain, R. L., Weinberg, A. E., Bennett, A., O'Reilly, J., & Basile, C. G. (2021). Ambitious and sustainable post-pandemic workplace design for teachers: A portrait of the Arizona teacher workforce. In F. Reimers (Ed.), *Primary and secondary education during Covid-19.* Springer.

Bellei, C., Contreras, M., Ponce, T., Yañez, I., Díaz, R., & Vielma, C. (2021). The fragility of the school-in-pandemic in Chile. In F. Reimers (Ed.), *Primary and secondary education during Covid-19.* Springer.

Brooks-Gunn, J., & Markman, L. B. (2005). The contribution of parenting to ethnic and racial gaps in school readiness. *Future of Children*, 15(1), 130-168. https://doi.org/10.1353/foc.2005.0001

Bryk, A. S., Gomez, L., Grunow, A., & LeMahieu, P. (2015). *Learning to improve: How America's schools can get better at getting better.* Harvard Education Press.

CAEd/UFJF. (2021). *Avaliação diagnóstica amostral da rede estadual de São Paulo. Relatório técnico.* Supervisão de Medidas Educacionais. Cen-

tro de Políticas Públicas e Avaliação da Educação and Universidade Federal de Juiz de Fora.

Cárdenas, S., Lomelí, D., & Ruelas, I. (2021). COVID-19 and post-pandemic educational policies in Mexico. What is at stake? In F. Reimers (Ed.), *Primary and secondary education during Covid-19*. Springer.

Cooperrider, D., Whitney, D., & Stavors, J. (2004). *Appreciative inquiry handbook: For leaders of change* (2nd ed.). Crown Custom Publishing.

Costa, E., Baptista, M., & Carvalho, C. (2021). The Portuguese educational policy to ensure equity in learning in times of crises. In F. Reimers (Ed.), *Primary and secondary education during Covid-19*. Springer.

Croft, M., & Whitehurst, G. J. (2010, July 20). *The Harlem Children's Zone, promise neighborhoods, and the broader, Bolder Approach to Education*. Brookings Institution. https://www.brookings.edu/research/the-harlem-childrens-zone-promise-neighborhoods-and-the-broader-bolder-approach-to-education/

DeBord, K., & Matta, M. (2002). Designing professional development systems for parenting educators. *Journal of Extension*, 40(2). https://archives.joe.org/joe/2002april/a2.php

Dickson, M., & Power, S. (2001). Education Action Zones: A new way of governing education? Foreword. *School Leadership and Management*, 21(2), 137-141. https://doi.org/10.1080/13632430120054727

Donnelly, R., & Patrinos, H. (2021). Learning loss during COVID-19: An early systematic review. *Covid Economics*, 77, 145-153. https://cepr.org/file/10833/download?token=nYfXEviJ

Ehren, M., & Baxter, J. (2020). *Trust, accountability and capacity in education system reform: Global perspectives in comparative education*. Routledge.

Family Strengthening Policy Center. (2007). *The parenting imperative: Investing in parents so children and youth can succeed* (Policy brief No. 22).

Fullan, M. (2010). *All systems go: The change imperative for whole system reform*. Corwin.

G20 High Level Independent Panel. (2021). *A global deal for our pandemic age.* https://pandemic-financing.org/report/foreword/

Hamilton, L. S., & Ercikan, K. (2021). COVID-19 and U.S. schools: Using data to understand and mitigate inequities in instruction and learning. In F. Reimers (Ed.), *Primary and secondary education during Covid-19*. Springer.

Hanushek, E., & Woessmann, L. (2020). *The economic impacts of learning losses.* OECD. https://www.oecd.org/education/The-economic-impacts-of-coronavirus-covid-19-learning-losses.pdf

INEED. (2021). *Aristas 2020. Primer informe de resultados de tercero y sexto de educación primaria.* https://www.ineed.edu.uy/images/Aristas/Publicaciones/Aristas2020/Aristas-2020-Primer-informe-de-resultados-de-tercero-y-sexto-de-educacion-primaria.pdf

Instituto Rodrigo Mendes. (2021). *Protocols on inclusive education during the Covid-19 pandemic an overview of 23 countries and international organizations.* https://institutorodrigomendes.org.br/wp-content/uploads/2020/08/research-pandemic-protocols.pdf

Iwabuchi, K., Hodama, K., Onishi, Y., Miyazaki, S., Nakae, S., & Suzuki, K. H. (2021). Covid-19 and education on the front lines in Japan: What caused learning disparities and how did the government and schools take initiative? In F. Reimers (Ed.), *Primary and secondary education during Covid-19.* Springer.

Kools, M., & Stoll, L. (2016). *What makes a school a learning organization? A guide for policy makers, school leaders and teachers.* OECD. https://www.oecd.org/education/school/school-learning-organisation.pdf

Kosaretsky, S., Zair-Bek, S., Kersha, Y., & Zvyagintsev, R. (2021). General education in Russia during COVID-19: Readiness, policy response, and lessons learned. In F. Reimers (Ed.), *Primary and secondary education during Covid-19*. Springer.

Lavonen, J., & Salmela-Aro, K. (2021). Experiences of moving quickly to distance teaching and learning at all levels of education in Finland. In F. Reimers (Ed.), *Primary and secondary education during Covid-19.* Springer.

Levin H. M. (2005) Accelerated Schools: A decade of evolution. In M. Fullan (Ed.) *Fundamental change* (pp. 137-160). Springer. https://doi.org/10.1007/1-4020-4454-2_9

Maldonado, J. E., & De Witte, K. (2020). *The effect of school closures on standardised student test outcomes.* Department of Economics, KU

Leuven. https://lirias.kuleuven.be/retrieve/588087

Comisión Nacional para la Mejora Continua de la Educación [MEJOREDU]. (2020). *Experiencias de las comunidades educativas durante la contingencia sanitaria por COVID-19.* Educación básica. Informe Ejecutivo. https://editorial.mejoredu.gob.mx/ResumenEjecutivo-experiencias.pdf

OECD. (2021). *The state of school education. One year into the COVID pandemic.* https://www.oecd-ilibrary.org/docserver/201dde84-en.pdf?-expires=1625493605&id=id&accname=guest&checksum=2C0A46048D-91273CF88B392975054583

Osterhom, M., & Olshaker, M. (2021, March 8). *The pandemic that won't end: COVID-19 variants and the peril of vaccine inequity.* Foreign Affairs. https://www.foreignaffairs.com/articles/world/2021-03-08/pandemic-wont-end

Pekrun, R. (2014). *Emotions and learning.* Educational Practices Series 24. International Academy of Education and UNESCO International Bureau of Education. http://www.ibe.unesco.org/en/document/emotions-and-learning-educational-practices-24

Reimers, F. (2020). *Empowering teachers to build a better world: How six nations support teachers for 21st century education* (1st ed.). Springer.

Reimers, F. (Ed.) (2021). *Primary and secondary education during Covid-19.* Springer.

Reimers, F. (2021b). Learning from a pandemic. The impact of COVID-19 on education around the world. In F. Reimers (Ed.), *Primary and secondary education during Covid-19.* Springer.

Reimers, F., & Schleicher, A. (2020b). *Schooling disrupted, schooling rethought. How the COVID-19 pandemic is changing education.* OECD. https://globaled.gse.harvard.edu/files/geii/files/education_continuity_v3.pdf

Reimers, F., & Schleicher, A. (2020a). *A framework to guide an education response to the COVID-19 pandemic of 2020.* OECD. https://www.aforges.org/wp-content/uploads/2020/04/framework.pdf

Reimers, F., & Marmolejo, F. (Eds). (2021). *University school collaborations during a Pandemic.* Springer.

Ritz, D., O'Hare, G., & Burgess, M. (2020). *The hidden impact of*

COVID-19 on child protection and wellbeing. Save the Children International. https://resourcecentre.savethechildren.net/node/18174/pdf/the_hidden_impact_of_covid-19

Soudien, C., Reddy, V., & Harvey, J. (2021). The impact of COVID-19 on a fragile education system: The case of south africa. In F. Reimers (Ed.), *Primary and secondary education during Covid-19.* Springer.

Tan, O. S. & Chua, J. (2021). Science, social responsibility, and education: The experience of singapore during the COVID-19 pandemic. In F. Reimers (Ed.), *Primary and secondary education during Covid-19.* Springer.

Timperely, H. (2008). *Teacher professional learning and development.* Educational Practices Series 18. International Academy of Education and UNESCO International Bureau of Education. http://www.ibe.unesco.org/en/document/teacher-professional-learning-and-development-educational-practices-18

UNESCO, UNICEF, & World Bank. (2020). *What have we learnt? Overview of findings from a survey of Ministries of Education on national responses to COVID-19.* https://openknowledge.worldbank.org/handle/10986/34700

UNICEF. (2021a). *Ready to come back: Teacher preparedness package.* https://www.unicef.org/mena/media/9601/file/UNICEF_MENA_TTP_total_0.pdf%20.pdf

UNICEF. (2021b). *Practical guide to blended/remote learning and children with disabilities.* https://www.unicef.org/media/100986/file/PRACTICAL%20GUIDE%20To%20blended.pdf

UNICEF. (2021c). *Teaching and learning resources for professionals and parents working with children with disabilities.* https://www.unicef.org/media/101006/file/RESOURCES%20CATALOGUE.pdf

Wasser Gish, J. (2021). *Building systems of integrated student support: A policy brief for federal leaders.* Center for Optimized Student Support, Boston College. https://www.bc.edu/content/dam/bc1/schools/lsoe/sites/coss/FederalPolicyBrief_v4.pdf

Willms, D. (2020). *The learning bar's framework for assessing student well-being.* The Learning Bar. https://thelearningbar.com/downloads/Thriving_%20The-Learning-Bars-framework-for-assessing-student-well-being_May-2020.pdf

About the author

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 Master's 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 International Commission on the Futures of Education and a member of the International Academy of Education.

He has written or edited forty books, of which the most recent include: *Primary and Secondary Schools during COVID-19, University School Collaborations during a Pandemic, An Educational Calamity: Learning and Teaching during the Covid-19 Pandemic, Leading Education through COVID-19, Education and Climate Change: The Role of Universities, Implementing Deeper Learning and 21st Century Reforms: Building an Education Renaissance after a Global Pandemic, Educating Students to Improve the World, Audacious Education Purposes. How Governments Transform the Goals of Education systems, Empowering Teachers to Build a Better World. How Six Nations Support Teachers for 21st Century Education.*

With his graduate students, he has developed three curriculum resources aligned with the UN Sustainable Development Goals, which are translated into multiple languages and widely used by schools and school systems around the world: *Empowering Global Citizens, Empowering Students to Improve the World in Sixty Lessons* and *Learning to Collaborate for the Global Common Good.*

More information about his work is available here *https://fernando-reimers.gse.harvard.edu/*

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