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Education in Latin America during COVID-19. Decline and silver linings during the greatest crisis in the history of public education and the challenges ahead

Chairman Sires, Ranking Member Green, and members of the House Foreign Affairs Committee, I appreciate the invitation to testify before you at this hearing on the educational impact of the Covid-19 Pandemic in Latin America and the Caribbean. I will structure my testimony in five sections:

The effects of the pandemic on education in Latin America and the Caribbean

Preexisting efforts to improve education

The Impact of Covid-19 on Education

Beyond learning loss. The education silver-linings of the pandemic.

The bumpy road ahead and opportunities for effective support

1. The effects of the pandemic on education in Latin America

When the World Health Organization declared COVID-19 a pandemic, on March 11, 2020, educators and education authorities the world over realized they, and especially their students, would be facing challenging times ahead. These challenges were greater in countries with weaker educational and health infrastructure, and for those children whose families had less resources to mitigate the economic impact of the pandemic. In Latin America, the educational effects of the pandemic were particularly harsh given the long duration of school closures and the deficiency in the alternative means that were used to teach remotely in reaching all children, especially the children of the poor, and because the economic and health effects of the pandemic increased the vulnerability of disadvantaged students and their families. As a result, the pandemic undermined much of the educational progress achieved at great cost in Latin America over the last decade in improving access to school to the most marginalized, and in supporting their learning, and undermines the future economic prospects of large segments of the population, aggravating preexisting social and political challenges.

Students in Latin America experienced the brunt of six mutually reinforcing challenges: the longest school closures, the lowest levels of resources and institutional capacity to mitigate learning loss, lower levels of access to vaccines, the greatest increases in poverty, lower effectiveness of alternative modalities to education, and the greatest levels of social and educational inequality.

The direct public health impact of Covid-19, its toll on human lives, and the indirect impact in economic activity exacerbated inequalities in what was already the most unequal region in the world. Social inequality and vulnerability, and weak health infrastructure, resulted in a disproportionate impact of the pandemic in the region, which was the epicenter for the larger part of 2020, as it was home to six of the top twenty-five death-producing countries in the world. As a result, the economy went into a recession, with GDP contracting 6.9 percent in 2020, the largest contraction in any world region (World Bank 2021).

The recently released Human Development Report which documents declining measures of life expectancy, education and income per capita since 2020, wiping out gains made between 2016 and 2019, shows that those declines were the greatest in Latin America (United Nations 2022).

2. A backdrop of efforts to improve education¹

Before the pandemic, education had come to be seen, in Latin America, as a path to increase the opportunities of the children of the poor and to reduce inequality in the most unequal societies in the world. Education gave hope to those less privileged that the lives of their children could be better than those of their parents. In that sense, educational progress was a pillar of democracy, and a foundation of increased future economic prosperity. Over the last quarter century, a number of countries in Latin America had increased the priority given education. As a result, preceding the pandemic, Latin America invested more on education, as a share of government expenditure and as a share of GDP, than any other region of the world, and education spending had increased over time (UNESCO 2020: fig. 21.1). Not only had Latin America increased the level of education spending, but it had also increased spending on poorer students through a variety of innovative targeting mechanisms. These include the Fund for the Maintenance and Development of Basic Education and Valorization of Education Professionals, in Brazil, a formula-based allocation established in 2007 and designed to close gaps in per pupil spending across municipalities, which decreased such inequality by 12 percent in five years (UNESCO 2021). Another formula-based allocation targeting financing innovation is Chile's Preferential Education Subsidy, which provides higher transfers per pupil to schools serving the poorest students and includes a specific amount per child plus an additional amount that is proportional to the percentage of children in poverty in the school; these resources are used by schools to fund school improvement strategies (UNESCO 2021). Last, cash transfers to families of low-income children have been used as income support, with contingencies that incentivize school attendance (Reimers, DeShano, and Trevino 2006).

As part of this societal commitment to education, many governments in the region undertook reforms aimed at elevating education standards (increasing the years of mandatory instruction and increasing the level of the curriculum), improving teacher preparation, increasing school autonomy, and improving educational management and accountability. Efforts to achieve those goals included not only those of governments at the federal, state, and municipal levels, but also the efforts of many different actors of civil society as well. Ambitious efforts to overhaul the curriculum in recent years include reforms in Chile, Brazil and Mexico, for example (Reimers 2020).

As a result of these efforts, mandatory instruction now covers nine to ten years of schooling, including primary education, which is compulsory in all countries in the region, and lower secondary education, which is compulsory in all countries except Nicaragua. Upper secondary education is now also compulsory in twelve of the nineteen countries in Latin America. These changes increased the levels of educational attainment of the population. Latin America has achieved almost universal

¹ This section draws heavily on Reimers, F. 2022.

attendance to elementary and lower secondary school, while the number of children out of school declined from 15 million in 2000 to 12 million in 2018 (UNESCO 2021). The greatest levels of exclusion are in upper secondary school. Among the children out of school in 2018, 16 percent were of elementary school age, 22 percent of lower secondary school age, and 62 percent of upper secondary education age. Attendance to upper secondary school increased from 70 percent in 2000 to 83 percent in 2018. During this period, the percentage of children completing primary school increased from 79 to 95 percent; completing lower secondary school from 59 to 81 percent; and completing upper secondary school from 42 to 63 percent. These numbers place Latin America above the global averages of 85 percent, 73 percent, and 49 percent, respectively (UNESCO and Inter-American Development Bank 2020).

As a result of such progress in attendance to school, most children in the region attend school at the elementary level in most countries in the region except Guatemala, Haiti, Honduras, and Nicaragua. At the lower secondary level, most students attend in most countries except Ecuador, El Salvador, Guatemala, and Honduras. At the upper secondary level, the lowest levels of access are in El Salvador, Guatemala, and Honduras.

A number of countries in the region, such as Brazil and Mexico, have adopted ambitious and broad ranging curricula; most countries have adopted systems to periodically assess student knowledge and skills, and to make such information available to the public; and school autonomy has increased. To protect the independence of assessments of student knowledge, several countries, such as Brazil, Colombia, and Mexico, created quasi-autonomous institutes for the evaluation of education, although the Mexican institute of evaluation was abolished in 2019.

These efforts to improve education produced almost universal access to school for those between the ages of six to fourteen, and access to four in five of those between the ages of four and five and between the ages of fifteen and seventeen. There have also been significant increases in primary and secondary school completion. Of those who begin primary school, 78 percent complete it; 60 percent complete lower secondary, 42 percent complete upper secondary (Arias and Martinez 2017). A combined index of education and health outcomes created by the World Bank (2021) shows that over the past decade most countries in Latin America improved on these measures.

Despite this considerable progress in school attendance and completion of the past two decades, a recent UNESCO report on inclusion concludes that “disadvantaged social groups continue to be excluded from education. Barriers against access to education of good quality are still too high for people with disabilities, migrants and refugees, indigenous peoples and Afro-descendants, and particularly affect girls belonging to these groups” (2021: vi).

Today, one in three four- to five-year-olds does not go to school, and only four in five thirteen- to seventeen-year-olds are enrolled in the education system, with 14 percent of them still in primary school as a result of having repeated several grades, which is fairly likely in the early grades. Educational opportunity is stratified along socioeconomic and ethnic lines. More than half of the children who live in rural areas or are from low-income backgrounds do not complete nine years of school. There are important variations in completion rates at the secondary level; they are lower in countries such as Guatemala and Nicaragua than in Argentina, Chile, Colombia, and Mexico. While these differences reflect in part differences in the social circumstances children from different backgrounds experience outside of schools, which are considerable in this, the region with the highest income inequality in the world, these differences in educational outcomes for students from various social origins relate also to differences in the conditions present in the schools they attend.

There is considerable social segregation of students, with low-income students streamed to schools that have less resources.

Expansion in attendance, completion, and average schooling attained has not translated into high levels of learning for all. Many countries in the region evaluate student knowledge and skills with curriculum-based assessments, and a few participate in international comparative assessments such as those conducted by the International Association for the Evaluation of Educational Achievement (the IEA studies), or the Organization for Economic Cooperation and Development (the PISA studies). Overall, the results of such assessments indicate that students achieve at low levels, relative to the intended goals of the curriculum and relative to their peers in other countries, and show that student knowledge and skills are higher for the more socioeconomically advantaged children. One in two Latin American fifteen-year-olds do not achieve minimum proficiency levels in reading.

3. The Impact of Covid-19 on Education

In March of 2020, when Covid-19 was recognized as a pandemic, governments in Latin America ordered the suspension of in-person instruction as part of the efforts to contain the spread of the virus. With the exception of Nicaragua, all countries in the region suspended in-person instruction. The suspension of in-person educational activities in Latin America has been longer than the suspension in any other world region, averaging 159 missed days of classes during 2020 alone (World Bank 2021). Governments and private educational institutions created a variety of alternative modalities to deliver instruction remotely. Given the limited access to internet connectivity and online devices (only 77 percent of fifteen-year-olds in Latin America have internet at home, and only 45 percent of the students in the poorest quintile do [World Bank 2021]), many of these alternative modalities involved the use of radio, television, technologies such as WhatsApp and distribution of textbooks and printed packages. The limited available evidence of the efficacy of those contingency plans to date suggests that access to these alternative modalities has mirrored the large socioeconomic divides that characterize Latin America. As access to opportunities to learn was mediated even more directly than it ordinarily is by supports at home—a place to study, access to connectivity and resources, the freedom to devote time to study, support from educated parents—the already large gaps in opportunity to learn that children experience when schools are in session were augmented. As a result of deficient opportunities to continue learning, many students failed to learn or disengaged from learning, and others altogether stopped attending planned activities (Reimers 2021 and Reimers et al. 2021).

The World Bank estimates that the percentage of children unable to read at the basic level will increase 20 percent, adding an additional 7.6 million children to the “learning poor” (World Bank 2021). Learning losses for the region, which will disproportionately impact the poorer students, are estimated at 1.3 to 1.7 years of schooling on average, amounting to an economic cost over the lifetimes of the current generation of learners of \$1.7 trillion (World Bank 2021).

The pandemic produced, in Latin America as in the rest of the world, the worst educational calamity in the history of public education. With schools closed, the ways in which students knew to learn and teachers knew to teach were interrupted, and the alternative arrangements which were made to teach during that period were, in many cases, improvisational and of varying effectiveness. School closures translated into students not learning what was expected they would be learning, resulting in lost opportunity to learn, and for some students also in regression, sliding back in some of the competencies they had already gained prior to the closures, resulting in learning loss. The deficient arrangements to sustain student engagement led some students to drop out. Learning loss,

lost learning opportunity to learn and dropout rates were greater for the most marginalized children not just because the arrangements made to educate them were less adequate, but because their families were less able to compensate for such shortcomings, providing additional supports in the form of parental engagement with school-work or additional tutoring. In addition, the pandemic impacted the poor through other channels –creating income and food insecurity, for instance—and this compounded the unequal effects of school closing, further increasing inequality.

It was not just the deficient approaches to educate during the pandemic, and the compounding effects of other impacts of the pandemic on income and health, that limited the educational opportunities of poor children, it was also the differences in the responses of the various educational streams into which students of various social strata are sorted out, with poor children often segregated into schools of low quality, that magnified the losses for the children of the poor (Reimers 2021).

A comparative study of the educational effects of the pandemic we conducted through the Global Education Innovation Initiative I lead at Harvard University concludes that the education losses were the result of impacts of the pandemic on poverty and household conditions, as well as the result of insufficient capacity of remote instruction to adequately sustain opportunity to learn. The study shows different educational consequences of the pandemic by country and social class (Reimers 2021). The mechanisms through which the pandemic influenced educational opportunity, augmenting inequality, included both the responses of the education system as well as the direct health and economic impact of the pandemic on students, teachers, families and communities. The main direct pathway limiting education comprised the interruption of in-person instruction, the duration of such interruption, and the adoption of a variety of modes of education during the period of suspension of in person schooling of varied efficacy, for the most part limited. A secondary direct pathway included the constrains on education spending caused by the reduced fiscal space resulting from the unforeseen need to finance the health and economic response to address the health crisis. Other pathways influencing students, their families and teachers directly included the impact on health as well as the impact of the pandemic on income.

These effects differed greatly among children in different socioeconomic circumstances, among different types of schools, and among different countries. For individual students, the educational effects of the pandemic were mediated by other conditions, mainly the education and resources of their parents. Some of these conditions were in turn aggravated by the pandemic— as poverty and social inequality increased, and as children in large families who shared limited space and connectivity resources at home had less space, time, and peace of mind to study as they were confined to their homes, where they had to study.

The differences of success in managing the spread of the virus across countries resulting from differences in the quality of political and public health leadership, differences in health infrastructure, risks, and financial and institutional resources resulted in considerable variation across countries in the duration of the period when in-person instruction was replaced with remote options. Furthermore, differences in technological infrastructure, access to connectivity, and previous experience and knowledge of Digi-pedagogies resulted in differences across countries, and among students within the same countries, in the amount of engaged learning time experienced by different students. There was considerable learning loss and greater loss for students from disadvantaged backgrounds, accentuated in countries with greater percentage of disadvantaged students as Brazil, Chile, or Mexico.

The comparative study showed also that education systems were in varying stages of readiness to sustain educational opportunity in the face of the disruptions caused by the pandemic. Those differences included access to connectivity at home and skills to learn and teach online, as well as level of resources, capacities, and institutional structures to meet gaps during the emergency. Levels of connectivity and resources were lower in Brazil, Chile, and Mexico.

Institutional fragmentation and school segregation contributed to augmenting inequality, as was the case in Chile, where the already-large inequalities in educational opportunity, produced by a highly stratified education system, were augmented with remote instruction, because of differential capacities of schools to provide adequate supports to the varying needs of children.

This comparative study and other studies of the effects of the pandemic show that the story of the educational effects of the pandemic is not a single story, but a story largely mediated by nationality –as national policy choices and institutional capacity and resources shaped the duration of school closures and the effectiveness of policy responses—and by social class –as the social circumstances of students shaped the educational institutions they had access to and the support they received from parents and from their schools. The educational impact of the pandemic proved then to be a quintessential ‘Matthew effect’, a term coined by sociologist Robert Merton (1968) drawing on the parable of the talents, to describe how unequal initial conditions often compound inequalities:

“For unto every one that hath shall be given, and he shall have abundance: but from him, that hath not shall be taken away even that which he hath.”

— *Matthew 25:24–30*

The pandemic’s impact on education was thus mediated by the multiple forms of marginalization that affect the children of the poor, multiple structures and processes which: home income and cultural poverty, weaker health and community infrastructure, weaker schools and less qualified teachers, and weaker institutional capacity in poorer countries.

Current research on the educational effects of the pandemic has emphasized learning loss, and the anticipated long-term consequences of a less educated generation. Less studied so far have been the distributional effects of the pandemic, which has augmented educational inequalities within and among nations. In this way the pandemic diminished the capacity of schools to be an avenue of hope for the poor that their children may have more opportunities than they did in life, and less able to disrupt the intergenerational transmission of poverty. The pandemic made education more unequal.

4. Beyond learning loss. The education silver-linings of the pandemic.

It should not be surprising that the pandemic produced an educational calamity, arguably the worst crisis in the history of public education. After all, shocks of varied sorts such as natural disasters or conflicts typically interrupt the functioning of schools and the lives of students, negatively impacting their learning. What should really surprise us is that during a global crisis of such magnitude there would be so much interest and effort to sustain educational opportunity. In particular, international development organizations and civil society demonstrated extraordinary leadership maintaining attention on the importance to sustain education during the crisis.

The United States Agency for International Development, for instance, pivoted some existing education programs and created new programming to support education in priority countries in Latin America focusing on the educational opportunities of the most affected vulnerable students. Such responses have relied on multi-sectoral partnerships bringing together governments, universities and civil society organizations (USAID 2022). Similarly, the World Bank, the Interamerican Development Bank, UNESCO and UNICEF have demonstrated exemplary leadership advocating for maintaining the priority of education, providing policy guidance to governments, and providing financing and technical assistance.

It is evident, in hindsight, that such preoccupation with education during the pandemic, from governments and international development partners, has been insufficient to prevent the learning loss and loss in learning opportunity, arguably reflecting not just the inadequacy of policy decisions, but the challenges of implementation which under normal circumstances often trump policy intentions, more so at a time when the education delivery chain was disrupted by the pandemic. In Latin America, lack of access to internet connectivity and devices, lack of capacity of teachers and students to teach and learn remotely, account for the deficient success of the remote strategies that were adopted.

It is necessary to keep in mind, in assessing the educational impact of the pandemic, that such impact happened to education systems which were, in many ways, failing students. Such preexisting deficiencies included not only the low levels of efficacy of schools in helping students develop the basic literacies of reading and math, but their low levels of relevancy in defining too narrowly the outcomes of schools and in failing to educate the whole child, addressing cognitive as well as socio-emotional dimensions of development. The World Bank had characterized the education situation just a couple of years prior to the pandemic as a ‘learning crisis’, and multiple international studies documented that many children spent years in school without gaining the benefits of literacy, or numeracy.

Paradoxically, in disrupting the functioning of schools and education systems, in upending the rules that ordinarily govern such institutions, the pandemic created the occasion for new and different ways of teaching and learning, as well as novel forms of organization and collaboration which resulted in pedagogical and curricular innovations. While these efforts were insufficient to prevent the educational effects which have been documented, these ‘positive outliers’ these programmatic and policy interventions to educate during the challenging context created by the pandemic, are of interest because of what they can teach us about the capacity of educational institutions to innovate during extremely challenging contexts. The pandemic represented a significant disruption, of unprecedented scale, which tested the organizational resiliency of education and upended many of the bureaucratic norms that govern education systems. Such disruption of education systems created a rare event in which the normal boundaries, constraints and roles that regulate the behavior of individuals in education organizations were suspended, in this way freeing the practices and interactions among educational actors and institutions allowing new forms of collaboration leading to novel ways to teach and learn. Even as the pandemic created other, new, constraints and challenges –resulting for example from the social distancing norms instituted by public health authorities to contain the velocity of the spread of the virus, or from inadequate resources or infrastructure to rapidly shift to digital platforms— it was precisely the existence of those new challenges and constraints, together with the temporary freedoms, which created the occasion for educational innovation.

During the period between April 2020 and June of 2021, my colleagues in the Global Education Innovation initiative and I, in partnership with colleagues in several international education institutions, conducted three studies of such innovation dividend.

The first was an effort to document emerging efforts of education continuity during the early phase of school closures, beginning in April of 2020. This was the result of a collaboration between the Global Education Innovation Initiative, the OECD, the World Bank and the organization Hundred. Between April and July of 2020 we wrote 45 case studies of innovations to sustain educational continuity.

The case studies included initiatives such as using radio, printed materials, educational television, and a variety of digital platforms, with and without internet, to sustain educational opportunity. They also included initiatives to develop the capacities of teachers to teach remotely, and to support parents as they supported the education of children at home. Some of them focused on novel ways to assess student knowledge remotely.

The 45 innovations studied focused on a range of educational outcomes, from maintaining students' engagement with learning—in activities of review of previously covered material—to covering new content in academic subjects, to supporting the well-being and socio-emotional development of students. This heterogeneity in early-stage innovations reflect the absence of consistent standards for education continuity strategies, and the predictable variability in attempted approaches and intended results.

In spite of this variability, most of these cases address, at least to some extent, competencies beyond cognition, recognizing perhaps the salience of socio-emotional well-being during the crisis, and the foundational nature of attending to such well-being before any other form of learning could be productive. For example, Fundación Sumate in Chile, a network of second chance schools for school dropouts managed by the Hogar de Cristo, prioritized the emotional wellbeing of students, as the foundation to meet their needs during the pandemic, and to maintain engagement with learning.

In Colombia, the Alianza Educativa rapidly developed printed materials to support distance education during the school closures. Their initial focus was on the emotional well being of the students, to then add an academic component to the materials.

For instance, Ensena for Colombia, created a rapid prototype of radio education, drawing on existing education materials from various organizations with which Ensena por Colombia had preexisting partnerships, based on those resources the team of Ensena for Colombia created 10 minute episodes. The same organization was able to produce at fast pace one new episode per day by engaging students, usually an under-utilized resources, along with teachers, in the development of new programs. Ensena por Colombia learned from the experience of other organizations in the Teach for All network, which had used radio education to deliver content, adding the use of a WhatsApp feedback loop in which teachers discussed the radio lessons with their students, in effect building a flipped classroom with low cost technologies as the platform.

Among the conditions which enabled the innovations examined in these cases were preexisting networks across schools, and in some cases across schools in different countries. For instance, the network Teach for All, a federation of national organizations aligned in goals with preexisting experience and structures to support the exchange of information, learning across the various national organizations in the federation, and collaboration, catalyzed innovation by rapidly sharing emerging innovative practices designed to teach during the pandemic. A newsletter which

reaches all teachers in that network was the vehicle through which teachers in Chile learned that their peers in Nigeria had used podcasts to deliver content remotely, inspiring them to do the same. The rapid creation of a radio education curriculum by the Ensena for Chile organization, spread throughout the network inspiring similar programs in Colombia and Peru. Teach for Colombia, for example, used existing social networks of educators to help spread the program within the network and beyond.

The cases illustrate also the power of collaboration, as the innovations involved, in many cases, the collaboration among teachers, and other stakeholders: members of the community, civil society organizations, and the private sector. To some extent the case studies illustrate the possibility of true collective leadership, in which various stakeholders come together to collaborate for the purpose of improving the performance of the education system. The challenges of achieving effective leadership are well known, one of the reasons the ‘system’ aspect of the education system is broken, and it is somewhat counterintuitive that in a context in which each of the stakeholders who came together in service of the greater good was in turn more challenged by the pandemic, that this would create the occasion for out of the ordinary collaboration.

The State of Sao Paulo in Brazil, for instance, developed in a matter of weeks a multi media center, which delivered education content via TV, radio, an app and printed materials, to sustain educational continuity during the period of school closures as a result of establishing partnerships with private providers and organizations of civil society. Of particular interest is the fact that this invitation to share leadership and responsibility extended by the State Ministry of Education to some of the most influential business leaders in the State, was followed by donations of services from telecommunication and education companies, which allowed the creation of the center, amounting to 0.6% of the annual education budget of the State. A number of different organizations collaborated in providing access to various elements of the education platform to students, for example, police officers visited the homes of the most marginalized students to deliver printed materials, and donated cloud computing time to host the technology platform.

For example, in the State of Maranhao, Brazil, a public-private partnership enabled the development of content to support remote education of children from 0 to 6 during the period when centers were closed. This partnership focused on supporting caregivers, rather than students directly as did most of the other components of the remote education strategy of the State. The focus of the programming was to use structured opportunities that enabled caregivers to transform everyday interactions with their children into opportunities for learning and development.

In Chile, the void of an effective educational response from the national government in the early phase of the pandemic, caused other levels of government, business and civil society organizations to step up to fill that void, as illustrated by the partnership between Ensena Chile, a network of mayors of cities and of local radio stations, in developing a distributing radio education.

Also in Chile, the work of the Fundacion Sumate maintaining socio-emotional support to vulnerable youth during the pandemic, built on support they had received from UNESCO in developing a curriculum to support the development of socio-emotional skills.

Between June and December of 2021 we conducted a second study of 31 educational innovations generated during the pandemic, this time examining to what extent those innovations aligned with the recommendations of UNESCO’s most recent report on the Futures of Education. Our intent was to examine whether the context of disruption created by the pandemic had allowed an innovation dividend aligned with aspirations to ‘build back better’ (Reimers and Operti 2022).

The recent report produced by UNESCO's International Commission on the Futures of Education emphasizes the importance of aligning education systems with the challenges of democratic backsliding, threats to human rights, climate change, growing poverty and inequality, by transforming the culture of education through a transformation of pedagogy, curriculum, the teaching profession, the organization of schools and lifelong learning. The report underscores the new urgency of strengthening education and reimagining the social contract with education so that it can effectively prepare students to address current disruptions in sustainability, democratic backsliding, the transformation of work, and the challenges of a future ever more reliant on technology (UNESCO 2021).

The report emphasizes the importance of pedagogies that foster cooperation and solidarity, and that connect students with the world via interdisciplinary and problem-oriented curriculum which engages them in collaborative learning. Of special importance in the report is the notion that the curriculum of schools should go beyond the basics and contribute to the development of the full range of human potential, promoting the integration of knowledge and socio-emotional competencies, fostering global competency, strengthening scientific literacy and the humanities, as well as digital skills and arts education. The report also focuses on the primacy of supporting teachers as agents of education transformation, and of leveraging digital technologies in support of schools (UNESCO 2021).

The report emphasizes also that the transformation of the culture of education requires partnership and broad social dialogue with numerous actors involved in education which can help translate these broad principles and aspirations contained into operational strategies which can guide educators with clarity as to what it is they should do differently to contribute to the transformation of the educational experience (UNESCO 2021).

Our study of thirty-one case studies of innovation that emerged during the pandemic focus mostly on innovations to support learning from home. Some of them involve developing multimedia platforms or other technological platforms to support students, teachers and parents, others involve focusing particularly in supporting the socio-emotional wellbeing and development of students, or in supporting teachers in developing new capacities, to engage students, to provide them feedback, to design learning experiences. Most cases contain not just one of these features, but are multidimensional, for example including a platform to deliver digital content, but also support for teachers to develop digital pedagogies. For example, all the innovations which focus on developing particular student competencies providing them more agency over their learning, are contributing both to develop the competencies which are the focus of the innovation (such as literacy, or numeracy, or science) while also developing the competencies for independent study. Similarly, as some of the innovations provide guidance to parents so they can support their children while learning remotely, they are in effect contributing to parenting education, even if that is not their main goal.

During the pandemic, Universities in Latin America also stepped up to support the emerging needs created by the crisis becoming engines of technological and social innovation to mitigate the impact of the crisis. For example, the EAFIT university in Colombia collaborated with the Ministry of Education, developing the platform for digital teaching which undergird the national remote teaching strategy during the pandemic. In Chile, the President of the Republic invited the presidents of the two main universities in the country, the University of Chile and the Pontifical Catholic University of Chile, to form a social roundtable to collaborate with the government in developing responses to the pandemic. In Mexico, the University of Guadalajara integrated the multiple

campuses of the university with the many high schools governed by the university, in professional development activities for staff to help them teach remotely. In Brazil, the Getulio Vargas Foundation collaborated with municipal secretaries of education, supporting the development of strategies to sustain teaching during the pandemic (Reimers and Marmolejo, 2021).

There were numerous university led initiatives to mitigate the health impact of the COVID-19 pandemic, including: the development of a molecular test to diagnose COVID-19 by the universities of San Martín and Quilmes in Argentina; the design of low-cost pulmonary ventilators by the Pontificia Universidad Católica del Perú; the design of protective masks for medical personnel by the University of San Carlos de Guatemala; the sequencing of the genome of a strain of COVID-19 by the University of San Francisco de Quito in Ecuador to monitor the virus; the development of a biosensor to detect virus cases in a cost-effective way at the National Autonomous University of Mexico; conducting diagnostic tests at the University of La Plata in Argentina; the development of a sanitizing cabin at the University of Chile; the development of a non-invasive ventilation system at the Autonomous University of Manizales in Colombia; the development of a mechanical ventilation device at the University of Concepción in Chile; the development of a rapid test to diagnose asymptomatic cases at the Pontificia Universidad Católica de Chile; the development of a disinfectant that eliminates the virus from surfaces at the Universidad de los Andes in Colombia; the development of an edible vaccine against the virus at the Autonomous University of Nuevo León; the University of Piura in Peru developed high-flow oxygen cannulas to treat extreme cases of infection; a nasal spray vaccine developed by the University of São Paulo in Brazil; the Austral University of Chile developed a low-cost test for mass diagnosis; the evaluation of existing drugs to attack the disease at the National Autonomous University of Mexico; the development of a molecular diagnostic kit at the Universidad Mayor de San Simón in Bolivia; the development of a mechanical ventilator at the Simón Bolívar University of Venezuela; In Uruguay, the Center for Innovation in Epidemiology Surveillance was established (Unesco, 2020b).

5. The bumpy road ahead and opportunities for effective support.

The educational challenges created by the pandemic are not over and may not be over even when the pandemic is under control. The reality that the pandemic will linger for some time, means that there are three kinds of education challenges: those involved in adapting to learning and teaching during the context created by the pandemic, in some cases involving remote distancing; of teachers and students, those involved in mitigating learning loss and ensuring that students learn what they need to learn; and those involved in reverting learning loss and building back better.

Beyond the need to mitigate learning loss and to continue to educate while the pandemic is still a risk, the education impact of the pandemic on the conditions children experience at home will continue during the pandemic's aftermath, in particular for those children whose families experience the brunt of the increase in poverty, food insecurity, and other shocks and vulnerabilities resulting from low income and marginalization.

This will require addressing the mental health challenges triggered by the pandemic, and the learning gaps caused by the pandemic, while also developing the skills necessary to address the new challenges, some of them caused by or compounded by the pandemic, such as social fragmentation and violence, growing poverty and inequality, diminished employment prospects, diminished trust in government, and climate change. Education systems face the triple challenge of recovering what was lost during the pandemic, addressing education challenges predating the pandemic, and aligning their response to prepare students for new societal and economic challenges and to build a better future.

Furthermore, given a likely economic recession and the burden of the costs of addressing the pandemic, it is conceivable that these challenges will need to be addressed in a context of financial austerity, for governments as well as individuals. The pandemic itself and its impact on other challenges is also likely to stretch government capacity, and with it the capacity to focus on education.

The constraints on financial resources will increase burdens on existing staff, already exhausted from the extraordinary efforts expended in sustaining education during the pandemic, having had to learn to teach in new ways, in a short time and with limited support, and learning to face new needs among their students created by the pandemic.

Given the considerable learning loss experienced by many students during the pandemic, learning recovery programs will be essential. To identify what needs to be remedied, assessment of students will be necessary as well as differentiated responses by schools and for different students. Targeted and personalized programs might include accelerated programs, extended learning time, dropout prevention programs, and increasing the capacity to learn and teach online, not just as a preventative measure against possible further interruptions of schooling but to enable extended learning time and to prepare students for lifelong learning. Beyond programs of cognitive support, the emotional trauma caused by the prolonged stress experienced by students and teachers during the pandemic, and by the losses directly experienced by some of them, will need to be addressed through appropriate interventions. For the children experiencing the effects of poverty, those experiencing food insecurity for instance, programs to attend to their nutrition and health will be essential.

To conclude, the COVID-19 pandemic created an education crisis in Latin America which robbed many students of the opportunities to learn what they were expected to and caused them to lose skills they had already gained, it also pushed some students out of school. These losses were unequally distributed among different students and education systems and, as a result, if they are not reversed, the outcome of the pandemic will be increased educational inequality, from which economic and social inequality will follow. These will further complicate other societal challenges, which predated the pandemic but were exacerbated by it: the challenge of increasing productivity, reducing poverty and inequality, increasing civic cohesion and trust in institutions and democratic governance, and addressing issues such as climate change or intra and interstate violence.

6. References

- Merton, Robert K. (1968). "[The Matthew Effect in Science](#)" (PDF). *Science*. **159** (3810): 56–63.
- Reimers, F. (Ed.) 2021. Primary and Secondary Education during COVID-19. Cham, Switzerland: Springer.
- Reimers, F. and Opertti, R. (Eds.) 2021. Learning to Build Back Better Futures for Education. Lessons from educational innovations during the COVID-19 Pandemic. UNESCO. International Bureau of Education. Geneva: International Bureau of Education.
- Reimers, F. and Schleicher, A. 2020a. A framework to guide an education response to the COVID-19 Pandemic of 2020. OECD.
- Reimers, F. and Schleicher, A. 2020b. Schooling disrupted, schooling rethought: How the COVID-19 Pandemic is changing education. OECD.

- Reimers, F. and Marmolejo, F. (Eds.) 2021. University and School Collaborations during a Pandemic. Cham, Switzerland: Springer.
- Reimers, F. 2022. Education. In Carey, H. (Ed.) Understanding Contemporary Latin America. Fifth Edition. Lynne Rienner Publishers. 2022
- United Nations. 2020. United Nations Comprehensive Response to COVID-19: Saving Lives, Protecting Societies, Recovering Better.
https://www.un.org/sites/un2.un.org/files/un_comprehensive_response_to_covid-19_june_2020.pdf
- United Nations. 2022. Human Development Report 2022-2022.
https://hdr.undp.org/content/human-development-report-2021-22_downloaded_September_10_2022.
- United States Agency for International Development. COVID-19 and Education Response in Latin America and the Caribbean. Prepared by LAC/RSD/EDU, April 2022
- Vincent-Lancrin, S., Cobo, C. and Reimers, F. 2022. How learning continued during the COVID-19 pandemic. Paris: OECD. <https://www.oecd.org/publications/how-learning-continued-during-the-covid-19-pandemic-bbeca162-en.htm>
- World Bank. 2018. World Development Report 2018. Learning to Realize Education's Promise. Washington, DC.