

How to reboot Education post-pandemic

Delivering on the promise of a better
future for youth



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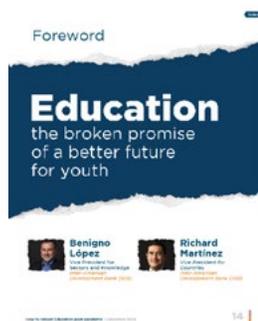
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Designed by Juan Sebastian Fonseca



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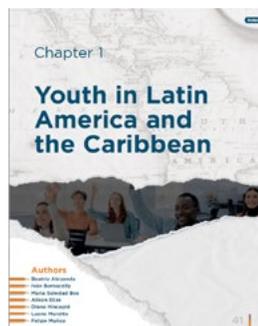
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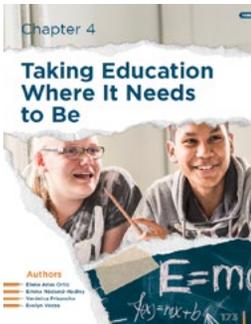
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About the Authors



**Beatriz
Abizanda**

Beatriz Abizanda is a Citizen Security lead specialist in the IDB, where she has steered the design, implementation, and technical assistance on crime prevention programs in Latin American countries, especially tackling juvenile delinquency. She is co-author of the Global Evidence Study on Justice and Security Reforms, of the National Academy of Sciences of the United States, among other criminological publications. She also belongs to the Editorial Board of "International Criminology", a peer-reviewed journal of the American Society of Criminology. She holds a degree in Economics (top academic honors) from the University of Valencia, a degree in Management from the Ecole Supérieure de Commerce de Marseille, a Master's degree in Criminology from the University of Cambridge and an MBA from Georgetown University.



**Gonzalo
Almeyda**

Gonzalo Almeyda has a degree in International Relations from El Colegio de México and a Master's in International Political Economy from the School of Advanced International Studies at Johns Hopkins University. In the educational sector, he has served as General Director in the Coordination of Advisors of the Secretary of Public Education of Mexico, as well as a consultant for companies, legislators and subnational governments. He currently works as a consultant for the Education Division of the IADB and is a professor at the School of Social Sciences and Government at Tec de Monterrey.



**Elena Arias
Ortiz**

Elena Arias Ortiz is a Senior Education Specialist at the Inter-American Development Bank (IDB) in Washington DC, where she works with ministries of education across the region in the use of technology to improve learning and school management. Her research focuses mainly on the development of skills and the transition of student to higher education and the workplace and the use of digital tools to improve learning. Before joining the IDB, she previously worked as a consultant for the World Bank, UNDP, and the European Commission. Elena holds a master's degree in Economic Analysis and a Ph.D. in Economics, both from the Université libre de Bruxelles (ULB).



**Cecilia
Berlanga
Alessio
Robles**

Cecilia Berlanga is a consultant in the Education Division at the IDB in Mexico. She has experience in strategic planning, design, management and evaluation of projects in the social sector. She has collaborated on projects of the Mastercard Foundation in Rwanda and Bill & Melinda Gates Foundation in Kenya on education and gender, respectively. She has taught at the undergraduate level on international cooperation and development and is the author of several publications on public policy, education, and gender. She holds a degree in International Relations from the Instituto Tecnológico Autónomo de México and a master's degree in Social Policy and Development from the LSE.



**Iván
Bornacelly**

Iván Bornacelly is an economist specialized on education, skills and school-to-work transitions. He holds a MA in Public Policy and International Development from Paris School of Economics. He has worked as a consultant for several international organizations such as Inter-American Development Bank (IDB) World Bank and Organization for Economic Cooperation and Development (OECD).



**María
Soledad
Bos**

María Soledad Bos works in the Education Division of the Inter-American Development Bank in Washington DC as a Lead Education Specialist. In this role, she regularly participates in the preparation and execution of lending operations in the education sector throughout Latin America and the Caribbean, develops sector strategies and conducts research on learning and equity in education. More recently, Soledad is coordinating the Green Social Agenda, which seeks to integrate social investments and policies with the climate change agenda. Soledad holds a Masters in Public Policy from the University of California at Berkeley and a BA in Economics from the Universidad Nacional de Cuyo in Mendoza, Argentina.



**Ela
Díaz**

Ela Díaz Díaz has a bachelor's degree and Master's in Economics from the Pontificia Universidad Católica de Chile (PUC). Has worked as a research assistant for the School of Government at the PUC in subjects such as education, health, and agricultural productivity (among others) and as a consultant in the IADB and the World Bank. She also worked as a teacher assistant at the PUC in areas such as health economics, impact evaluation of public policies, poverty and inequality, and transport economics. She is currently a full-time consultant for the Education Division of the IADB in the Honduran Representation.



**Ximena
Dueñas
Herrera**

Ximena Duenas is an Education Specialist in the Education Division of the IDB. Her areas of interest are early literacy, assessment, and digital transformation. Before joining the Education Division, she was the Colombian Institute for the Evaluation of Education's director and previously was a professor in the Department of Economics at Icesi University. Ximena has a master's degree in International Affairs and a PhD in Economics and Education from Columbia University.



Gregory Elacqua

Gregory Elacqua is the Principal Economist in the Education Division at IDB. He was previously the Director of the Public Policy Institute at the Universidad Diego Portales in Chile. His research focuses on the economics of education, school finance, teacher policy, centralized student and teacher assignment, and the political economy of reforms. He has also been active in education reforms. He was an advisor to three Ministers of Education and to a member of the Education Committee in the Senate in Chile. He holds a Ph.D. in Public Policy from Princeton University.



Alison Elías

Alison Elías is an Operations Specialist in the Latin America and Caribbean Public Sector Division at the European Investment Bank. Previously, in the Migration Unit of the Inter-American Development Bank, she led the preparation and implementation of multi-sectoral projects for the social and economic integration of migrants, refugees and their host communities. Alison has 15 years of experience working in the public and private sectors, think-tanks and international organizations and holds a Bachelor's degree in Economics from the Instituto Tecnológico Autónomo de México (ITAM) and a Master in Public Administration and International Development from Harvard University.



Raquel Fernández Coto

Raquel Fernández-Coto is an Education Specialist within the Inter-American Development Bank's Education Division. She has particular interest and expertise in the areas of secondary education, technical education, on-the-job training, and digital transformation. Before joining the Education Division, she was part of the IDB's Labor Markets Division, the World Bank's Economics Unit of the Department of Sustainable Development for Latin America and the Caribbean, and Costa Rica's Competitiveness Promotion Council. She has a Bachelor's Degree in Psychology from the University of Chicago and a Master's Degree in Public Policy from Harvard's Kennedy School of Government.



Verónica Frisancho

Verónica Frisancho is a lead economist at the Research Department of the Inter-American Development Bank (IDB). Verónica's work can best be described as applied microeconomics, and her main field of specialization is Development Economics. Her research in these areas includes an emphasis on education, labor markets in developing countries, gender, and financial inclusion. She has published chapters in books and has both published and refereed for several international peer-reviewed journals. She holds a Ph.D. in Economics from Pennsylvania State University and a bachelor's degree in Economics from the Universidad del Pacífico in Lima, Peru.



**Vicente
García
Moreno**

He is a founding partner of XABER and Senior Economist in the education team at the World Bank. Between 2015 and 2018 he held the positions of Deputy Director of Pensions and Social Security and then General Director of Productivity Analysis, both at the Ministry of Finance and Public Credit. He is the author of more than 10 publications in the field of economics and education. Vicente holds a PhD in Economics and Education from Columbia University, a Master's degree in Applied Economics from El Colegio de la Frontera Norte and a Bachelor's degree in Economics from Universidad de la Américas, Puebla.



**Jenny
Carolina
Hernández
Cardozo**

Carolina Hernández is an economist from the Universidad Militar Nueva Granada and Master in Demography from the Colegio de México. During her career, she has worked in the line of data analysis and population studies in entities such as the Ministry of Defense of Colombia, the Macroeconomic Studies Group of the Nueva Granada Military University; and the National Administrative Department of Statistics of Colombia. She currently works as an external consultant for the Education Division of the IADB.



**Diana
Hincapié**

She is an Economist at the Education Division of the IDB, where she leads research and works in the design, implementation and evaluation of education programs and policies. She is a co-author of the IDB's flagship publication Learning Better: Public Policy for Skills Development, and of various books and peer-reviewed articles. She has worked for the IDB's Research Department, Poverty and Gender Unit at the World Bank, and the Center of Economic Development Studies at the Los Andes University in Colombia. She holds Master's and Bachelor's degrees in Economics from Los Andes University and a Ph.D. in Public Policy and Public Administration from The George Washington University.



**Juan
Francisco
Margitic**

Juan Francisco Margitic is an Economics Consultant in the Education Division of the Social Sector at the Inter-American Development Bank. He combines economic theory and empirical methods to address policy-relevant questions in the fields of development and political economy. He has advised on major projects relating to learning loss, the centralized assignment of students and teachers, and the efficiency of education spending. Juan holds a Ph.D. in Economics from Georgetown University and a B.S. from Loyola Marymount University





Luana Marotta

Luana Marotta is an Education Senior Associate at the IDB's Education Division and currently works with Ecuador and Bolivia. At the bank, her research has focused primarily on issues related to teacher allocation and school funding policies in Latin America. Luana has a master's degree in Sociology from the University of New Brunswick, and she holds a Ph.D. in Sociology of Education and International Comparative Education from Stanford University.



Mercedes Mateo Diaz

Mercedes Mateo Díaz is Education Division Chief at the IDB Group, where she leads an ambitious initiative to rethink education and strengthen the learning ecosystems to equip citizens with 21st-century skills. She coordinates the research, design, and execution of innovative education projects. Her work covers different areas of international development and social policy, with a strong emphasis on inequality. She has also made contributions in the areas of institutional reform, female labor participation, early childhood education and childcare policies, soft skills development, and social cohesion. She holds a PhD in Political Science from the University of Louvain. In 2004, she was a researcher at the Belgian Fund for Scientific Research (FNRS) and worked as an honorary researcher until 2007. From 2002 to 2004, she was a Marie-Curie Postdoctoral Fellow at the Robert Schuman Centre for Advanced Studies the European University Institute.



Alejandro Morduchowicz

Alejandro Morduchowicz is a Lead Education Specialist in the Education Division at the IDB. He is a researcher and senior economist specialized in educational planning, administration, public policy analysis, economics and financing. He has worked in the development and implementation of education systems processes and in different studies on teacher management, school effectiveness and sectoral supply and demand planning. He has participated in the design of models to optimize efficiency in the allocation of educational resources. He holds a degree in economics from the University of Buenos Aires and a postgraduate degree in economics from the Instituto Torcuato Di Tella.





Felipe Muñoz

Felipe Muñoz leads the Migration Unit of the Inter-American Development Bank. Previously, he was the Presidential Advisor for the Border between Colombia and Venezuela to the President of Colombia where he coordinated the government response to the migratory flow from Venezuela at the national and local levels, as well as the related efforts of donors, international actors, and organizations of civil society. Previously, he was a Senior Advisor to the Board of Executive Directors of the Inter-American Development Bank. Throughout his career in the Colombian public sector Mr. Muñoz served as Superintendent of Surveillance and private security, Director of the National Intelligence Agency, and advisor to the Mayor's Office of Bogotá and the Ministry of Finance and Public Credit, among other positions. He is a graduate of the Universidad Externado de Colombia, where he obtained a degree in Finance and International Relations, and the London School of Economics and Political Science in the United Kingdom, where he obtained a Master's Degree in Urban and Regional Planning.



Emma Näslund-Hadley

Emma Näslund-Hadley is a Lead Education Specialist at the Inter-American Development Bank (IDB) in Washington DC, where she works on education reform throughout Latin America and the Caribbean. Her research spans pre-primary through secondary education, focusing on discovering learning processes in the classroom that promote children's development of socioemotional skills, as well as conceptual, generalizable knowledge in mathematics and science. Previously she held positions with the European Parliament and the United Nations. Emma has a master's degree in international economics and finance from the University of Linköping and a master's degree in public affairs from Princeton University.



Marta Ruiz-Arranz

Marta Ruiz-Arranz is a Senior Economic Advisor in the Central America, Haiti, Mexico, Panama and Dominican Republic Country Department of the Inter-American Development Bank, where she previously served as an economic advisor for the Andean region. Prior to joining the IDB in 2015, Marta worked for 12 years at the International Monetary Fund, where she was a Deputy Division Chief in the Fiscal Affairs Department. Marta Ruiz-Arranz received her PhD in Economics from Harvard University.



Agustina Thailinger

Agustina Thailinger is a consultant at the Inter-American Development Bank's (IADB) Education Division, where her work focuses on educational projects in the Caribbean region and in Costa Rica. Before joining the IADB, Agustina worked for both public and private sector institutions in Argentina, such as the Fundación Banco Municipal de Rosario, Universidad Tecnológica Nacional, and the Centro de Estudios para el Desarrollo Humano (CEDH) at Universidad de San Andrés. Agustina holds an undergraduate degree in Economics from Universidad Nacional de Rosario in Argentina and a master's degree in Economics from Universidad de San Andrés in Argentina.



**Francisco
Javier
Valverde
Rodríguez**

Economist by the National Autonomous University of Mexico (UNAM). He has done research stays at EL Colegio de México, the University of Waterloo, and the Hebrew University of Jerusalem. He has also collaborated in research projects on labor and education economics for the Inter-American Development Bank, the World Bank, and the Espinosa Yglesias Research Center. His areas of interest are social inequality and the role of education in social mobility.



**Evelyn
Veza**

Evelyn Veza is an economist focused on labor market topics, social protection, and distributional analysis. Currently, she is consultant for international organizations and associate researcher at CEDLAS. Her work has included collaborations with the IADB, WB, ILO, ITC-ILO, ECLAC, and Fundación Telefónica in analytical and operational activities in Latin America. She received her MSc in Economics from the National University of La Plata and a bachelor's degree in Economics from the National University of Rosario, Argentina.



**Pablo
Zoido
Lobatón**

Pablo Zoido is a Lead Specialist in the Education Division of the IDB. He was a technical lead on the OECD's PISA for Development project and has worked on governance indicators at the World Bank research group and on the economic outlook for Latin America at the OECD Development Centre. Pablo has a master's degree in International Relations from Johns Hopkins University and a second master's degree in Business Research from Stanford University.



Foreword

Education

the broken promise
of a better future
for youth



**Benigno
López**

Vice President for
Sectors and Knowledge
*Inter-American
Development Bank (IDB)*



**Richard
Martínez**

Vice President for
Countries
*Inter-American
Development Bank (IDB)*





On average, 165 million students in Latin America and the Caribbean lost 237 days of school due to the pandemic. The repercussions of this silent crisis may affect an entire generation, but may also provide an opportunity to ensure that we do not return to the pre-pandemic situation; by designing education systems and providing training in key skills to develop the human capital the region requires.

Youth is a crucial stage of development that, in an ideal world, should endow us with the gateway to multiple future opportunities. This historical hiatus in studies has exacerbated the challenges and risks inherent to this stage of life, radically altering students' life projects and leading them to face, especially young women, a disproportionate increase in domestic chores and domestic violence.

In addition to these figures, there are also those of school dropouts: an estimated 3.5 million students have dropped out of school throughout the region. If this trend continues, unfortunately, the probability that a Latin American student finishes school could regress to the levels of two decades ago.

Furthermore, the vicious cycle associated with lack of motivation, economic pressure, school dropout and learning losses is worsened in vulnerable populations. As a result of the pandemic, students of lower socioeconomic status will suffer cumulative learning gaps of 2.5 years compared to the school performance of their peers in the highest quintiles.

For those young people already in the labor market, the prospects are not much better. It is estimated that between two and three million are unemployed and that 70% of those who managed to keep their jobs did so in the informal sector.

The cost of this situation, of not taking action, is too high. According to the data collected in this study for Chile, Colombia, Costa Rica, Mexico and Argentina, young people could lose around 11% of their lifetime labor income, equivalent to 17% of the aggregate GDP of these countries.

We have an obligation to reverse the losses experienced in learning, but we must also take the opportunity to invest in the skills development and well-being of the youth, laying the foundation for the region's prosperity for generations to come.





A call for collective action

Acting requires an in-depth understanding of the causes of educational problems. For this reason, at the IDB we have adopted a comprehensive vision of the youth in the region, including their professional aspirations and their responsibility in civic life, with an emphasis on their commitment to democratic values and the creation of a sustainable planet.

To achieve this, it is necessary to unite the efforts of multilateral organizations, governments, representatives of the private sector and civil society. Education should be everyone's responsibility. In our case, we have been in the shoes of the region's finance ministers, and we are aware of the enormous pressure countries face to finance public policies that guarantee the well-being of their citizens. Therefore, the search for consensus, as well as the establishment of clear priorities and an actionable roadmap, are key elements.

This publication assists the governments of the region in this task. At the IDB, we support countries not only in their response to the emergency but also in their recovery efforts through four priority actions. In the short term, reintegrating students who have dropped out, promoting digital transformation, accelerating learning, and ensuring student well-being.

In the medium and long term, through a joint effort with the entire educational community, we propose to take advantage of this window of opportunity to carry out the structural reforms necessary to achieve equitable, efficient, and transparent educational systems: educational information and management systems, educational leaders and teacher career, curriculum, financing formulas and centralized systems for assigning enrollment and teachers, among others.

The region needs quality education to enable youth to acquire foundational skills aligned with the demands of today's world. A modern labor market that requires young talent who can navigate the digital world, who can think and analyze large information flows critically, who are creative, problem solvers, collaborators, and team builders, and who can demonstrate resiliency. These skills will allow them to perform non-routine tasks and access those jobs that cannot be replaced by machines, so that in addition to becoming productive actors who promote innovation, they will be agents of change and responsible with respect to the environment in their community.

Young leaders are already raising their voices in our region and calling for greater justice and equality, demanding greater participation in democratic processes and in global movements in favor of peace, the fight against poverty and care for the planet, becoming productive actors who promote innovation. It is up to all of us to write the next chapter of our history, prioritizing the education of future generations.

Richard Martínez Alvarado, Vice President for Countries

Benigno López, Vice President for Sectors and Knowledge

Introduction

From a Broken Promise to a New Beginning



**Mercedes
Mateo Diaz**

Chief of Education
Division

*Inter-American
Development Bank (IDB)*



"People cannot always be resilient, but a country can".
Tara Westover, author of *educated*¹



Educated, a book by Tara Westover (2018), is the story of a Mormon girl from Idaho whose parents kept her out of school. Westover's story takes place in the United States, but the feeling of despair when trying to escape one's fate while carrying the burden of poverty could be shared by many young people in the Latin American and Caribbean (LAC) region. Poverty shapes their brains, mindsets, and behavior, and defines, as the author describes, the architecture of people's lives. The point of the book is that education was Westover's way out of a world she wanted to escape. Within that journey—in addition to her determination, grit, and effort—was a whole system of scholarships, cash transfers, and teachers supporting her. This is the story that education systems should be able to tell, not only in isolated or exceptional cases, but in significant numbers.

During the COVID-19 pandemic, 165 million students in LAC were abruptly disconnected from education. By the end of 2021, schools had been closed an average of 237 days, more than in any other part of the world. Teachers and parents made heroic efforts to ensure that students maintained some level of learning. Education ministries broadcasted lessons on radio and television, expanded educational websites, and used text-messaging to send homework. In low-income households, children took turns doing lessons on a relative's smartphone or shared printed handouts with their siblings.

Despite these efforts, the evidence gathered in this report shows that many students were not engaged in meaningful learning activities and that the halt in skills and human capital accumulation will have immediate and long-term consequences for countries' well-being. Why? It wasn't just the pandemic; it was the fact that the region and its education systems were not well prepared to endure a shock of this magnitude. One cannot understand the short- and long-term effects of the health crisis without considering the initial conditions. School closures came on top of structural deficiencies that have remained unsolved over the past decades. Inequality and inefficiencies in access to quality education services have prevented millions of students to find in schools a safe and stimulating space for personal, socio-emotional, and academic growth. If nothing is done, we will leave a generation behind. Governments need to use every lever available to recover, and education is key in that process.

1. Tara Westover, "I Am Not Proof of the American Dream," *New York Times*, February 2, 2022, www.nytimes.com

This publication is the first report on education after the pandemic to focus on youth—the transition between childhood and adulthood²—and to examine the immediate and long-term effects of the crisis and social distancing measures on the lives and skills of this generation of young people. Although the COVID-19 pandemic has affected lives across the globe, it has not done so uniformly. Perhaps one of the most devastating legacies of the pandemic will be its toll on young people. During one of life's most critical developmental periods, large numbers of youth have been deprived of education and exposed to increased levels of social, health, and economic insecurity, as well as domestic violence and abuse. Today, advances in neuroscience provide a better understanding of how the brain works and develops through the different stages of childhood until adulthood (Blakemore and Choudhury 2006; Konrad, Firk, and Uhlhaas 2013). After birth, there are two moments in life where we need to pay particular attention: brain development peaks during the early years (from ages 0 to 5) and then again around puberty. Although the size of the brain doesn't change much after five, the functional connections between its different parts mature and evolve. Whereas the brain develops very fast during the first years of life when basic functions and sensory and motor brain regions are formed, it is during adolescence that the last region of the brain, the prefrontal cortex, develops. The cognitive abilities that rely on this area develop at that age. Social cognition and executive function performance that allow individuals to take perspective, focus their attention, make decisions, be self-aware, and inhibit impulses significantly develop and improve during adolescence.

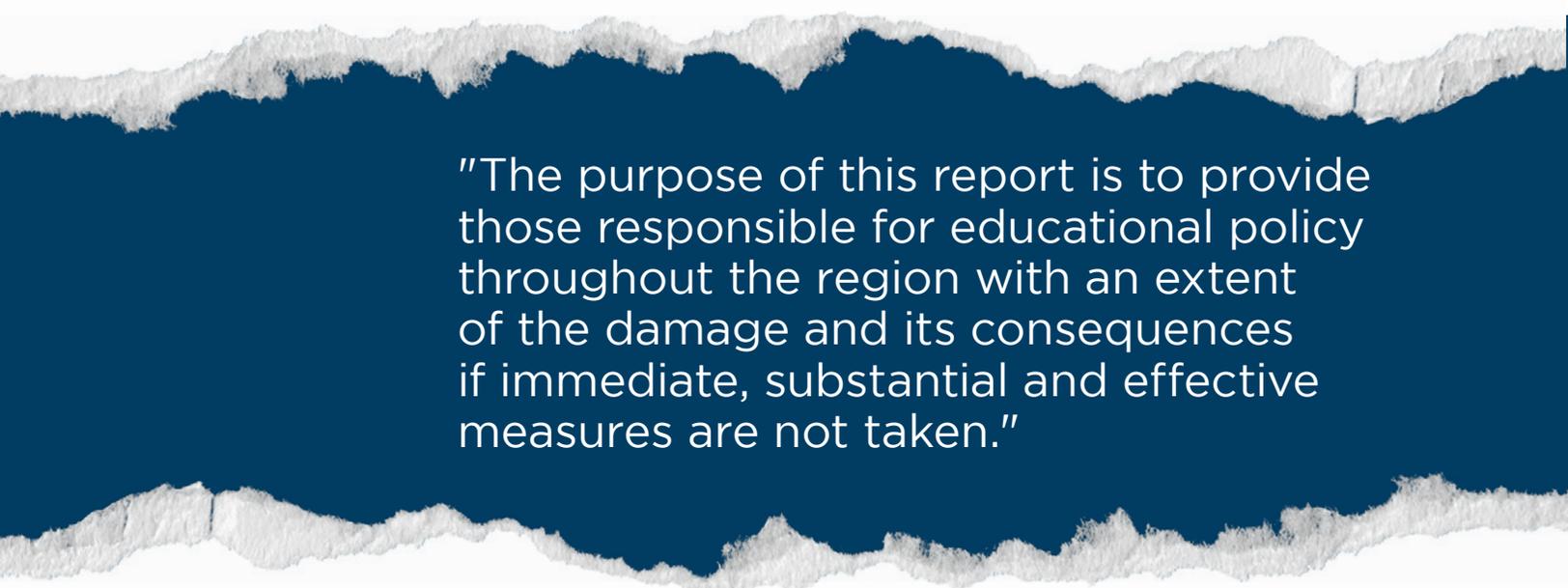
"This publication is the first to focus on young people, post-pandemic, examining the immediate and long-term effects of the crisis and social distancing measures on the lives and skills of this generation."

2. For this publication, we are focusing on young people, a broad definition that includes adolescents and youth. The age range for adolescents and youth varies depending on the source and country, but generally starts at 10 years old and goes well into a person's 20s; according to the World Health Organization (1986), adolescence includes individuals from 10–19 years old and youth includes those from 15–24 years old.



Because those years are so crucial, it becomes more critical than ever to understand the effects of the stressors and trauma experienced during the pandemic on the cognitive functions and socio-emotional well-being of the 165 million youth in the region (Hempel, Wuermli, and Lundberg 2012). This is the last opportunity to make long-lasting interventions that will impact 25 percent of the world's population (Sheehan et al. 2017; Knowles and Behrman 2005). After these years pass, there will be no other moment in their lives where the neural plasticity of their brains, and therefore the propensity to learn new skills, will be at its peak.

The aim of this report is to provide education policymakers across the region with a sense of the magnitude of this damage; the consequences if no immediate, major, and effective action is taken; and the priorities for education policy given the starting point and the effects of the pandemic. More importantly, the report is also a compass for the development of evidence-based education sector responses to the immediate needs of youth, as well as medium-term measures that are needed to build back our education systems to be more resilient, equitable, and efficient in developing effective lifelong learners.



"The purpose of this report is to provide those responsible for educational policy throughout the region with an extent of the damage and its consequences if immediate, substantial and effective measures are not taken."

The report opens with a chapter that briefly describes the underlying conditions: a depiction of LAC youth before the COVID-19 pandemic. It summarizes general trends in skill development, poverty, economic participation, migration, fertility, violence and crime, social and political participation, and attitudes towards market and democracy. Even though secondary education attendance has increased in almost all LAC countries, not all students achieve successful educational trajectories. High dropout and underachievement rates are pervasive, especially among young people from the most vulnerable populations. And the quality of education considerably affects learning and successful entry into the labor market. Lack of educational and economic opportunities, at a very sensitive period in life for brain development, drives adolescents and youth to make the wrong decisions and engage in risk behaviors, including crime and violence. Taken together, these themes provide a comprehensive picture of the challenges to be addressed and opportunities to build on to improve the lives of this generation. Individually, each theme suggests specific areas of focus for education policymakers as they establish goals and targets and analyze how to prioritize the use of scarce resources.





The second chapter analyzes the impact of the pandemic on preexisting critical conditions, based on an in-depth study of schooling indicators in 11 Latin American countries that represent 83 percent of the students in the region between 6 and 23 years old. This is the first effort to analyze vast datasets from periodic household surveys in which parents or guardians answer questions about school-aged children and youth under their care, administrative data from ministries of education, and results from standardized tests. Using this data in combination with emerging causal evidence, this section discusses the scale of pandemic-induced learning losses and dropout rates, identifies the individuals most impacted by the pandemic, and describes the mental health consequences. Evidence shows that millions of students were completely cut off from their educational institutions, with a dramatic reduction in the number of hours that students and teachers dedicated to academic activities. Causal evidence documents 72.5 percent learning losses for remote emergency learning and a 2.5 times higher risk of dropout (Lichand et al. 2021). Data also shows increased inequality in access to quality learning opportunities, with a more pronounced impact on women and girls and students in remote and rural areas, reversing the trends observed in the last decades. Countries with standardized evaluations also show a significant reduction in the number of students who took the tests. Finally, the impact of financial stress, the loss of relatives, and isolation from friends and social interactions took a toll on students' mental health, including hyperactivity; feelings of fear, anger, sadness, or frustration; and online toxic behaviors like cyberbullying, with higher overall effects among females.





The third chapter examines the consequences of inaction by exploring the economic costs of not implementing strong measures to stem the education crisis and learning losses incurred during the pandemic. Together with estimates of income, growth prospects, and productivity, it outlines some of the potential consequences of inaction, including inequality, social unrest, violence and crime, immigration, and political instability. This section also presents an overview of trends in education spending in the region and provides estimates of the investments needed to recover from the pandemic and transform education systems. The final chapter of this flagship publication is a call for action to overturn the current crisis. It presents evidence-based youth policies that can accelerate skill development, well-being, and civic and political engagement. The chapter discusses education policy responses that have been effective in improving equity and inclusion during school closures; presents the policy options available to school systems to close learning losses on an unprecedented scale; addresses the looming youth mental health crisis; and equips educators with the tools they need to accelerate students' learning, while supporting the development of global citizenship competencies that young people need to thrive in an increasingly interconnected and complex world.



Being Young in Latin America and the Caribbean Today

There are two moments in life that offer tremendous opportunity to shape human capital development: early childhood and adolescence. It is at those two critical points in the life cycle that the brain is most malleable. Yet educational outcome statistics reveal that education systems fail precisely during those two crucial stages. Whereas primary school is almost universal, most students miss out on early childhood education programs and drop out of secondary schools. During the first five years of life, access to quality childcare and early development interventions is scarce, with large socioeconomic inequalities, which prevents children from acquiring the basic cognitive, language, motor, and socio-emotional skills to start school ready to learn. For secondary education, the region has seen an increase in enrollment rates in recent decades. However, enrollment does not translate into completion. Only 6 out of every 10 students who enter secondary school finish their schooling, and of those, only 1 finishes with the minimum skills required to pursue higher education or formal employment (Ramirez and Viteri 2020).

"There are two moments in life that offer an enormous opportunity to shape the development of human capital: early childhood and adolescence."

Adolescence: A Critical Moment to Act.

Adolescence is a period of significant development that begins at age 10 and ends in the mid-20s (NASEM 2019). It is during adolescence that maturation occurs in the last part of the brain: the prefrontal lobe. This part of the cortex is key for functions such as impulse control, attention, reasoning, managing complexity, problem solving, comprehension, creativity, and perseverance. Adolescence is often portrayed as a period when youth spiral out of control with unsafe behaviors, low self-esteem, and anxiety. Poor choices frequently include dropping out of school, drug and alcohol use, or teen pregnancy (Quinn and Harden 2013). This period is particularly challenging because adolescents' brains are still developing in the regions associated with cognitive control and higher-order executive functions, which can trigger risky behavior (Romer 2009). At the same time, adolescence is a period of tremendous opportunity to lay the foundation

for success in school and in life. It is a period where personal relationships with peers and romantic partners become central as youth transition from school to higher education or employment, a stage of life when human capital investment has high returns (Schultz 1961; Dahl et al. 2018; NASEM 2019). Interventions made during adolescence have the potential to improve developmental trajectories and can amend and reduce the risks of previous developmental challenges (Dahl et al. 2018). Combined investments in health and education during adolescence can have a high ratio of benefits to costs between 5 and 10, which are within the range of returns on investment for early childhood interventions (Sheehan et al. 2021; Center on the Developing Child 2007; Rolnick 2014; Berlinski and Schady 2015).

The LAC region is home to some 165 million adolescents and youth between ages 10–24 years (Pan American Health Organization 2019). The full participation of the region’s youth in society is essential to effectively respond to local and regional challenges and to build a sustainable, equitable, democratic, and prosperous region. But most LAC youth do not receive the support required to develop the cognitive and socio-emotional skills to successfully pursue decent employment and continuous learning and to participate in civil and political life. One in four youth have never attended secondary school, and among those who do, only 45 percent graduate on time (Bassi, Busso, and Munoz 2015). A majority of those who complete their secondary education fail to develop the skills they need to succeed in school and in life. Students from LAC that participated in the Programme for International Student Assessment (PISA) in 2018 lagged behind their peers in Eastern Europe, Central Asia, the Middle East, and North Africa by at least one school year on average. One in two 15-year-old students in LAC did not reach the basic reading proficiency level compared with one in five students in Organisation for Economic Cooperation and Development (OECD) countries (Bos, Viteri, and Zoido 2019), and 69 percent of students were not able to perform basic math tasks (OECD 2020).



This limited skill development makes the transition to the labor market challenging. High unemployment, informality, and inactivity rates affect almost 110 million youth in the region (ILO 2020). Youth unemployment is three times higher than in the adult population, with one in five young jobseekers being unable to find employment (ILO 2021). The lack of skill development and challenges in transitioning to the labor market lead to a high poverty rate (41 percent) among youth, compared with a general poverty rate of 30 percent.

In this context, drawing on Hirschman's classic concepts (1970), LAC youth are using two basic responses: voice and exit. In many countries across the region, youth have voiced their discontent and frustration with their lack of opportunities. Youth protests and demonstrations, and activities on social media, have been omnipresent even before the pandemic, opposing increases in subway fares, restrictions in access to higher education, lack of economic opportunities, fiscal reform, perceived inequality, and unfairness. Social unrest is a symptom of more profound and structural issues facing LAC societies. Faced with poverty, pandemic-induced prolonged school closures, lack of economic opportunities, or violence, some youth also choose or are forced to exit; they disengage from school or drop out entirely, replacing participation in the economy and the labor market with illicit activities, crime, and violence or simply leaving their countries behind and migrating to find promises of a better future in new lands. Data suggests that low incomes and the search for employment opportunities are key drivers of migration decisions, and both are highly correlated with low levels of education and the accumulation of relevant skills for work. During the pandemic, the number of hours that youth dedicated to study and academic activities dramatically dropped; we estimate a 13 percent increase in the probability of dropout of students between 12 and 17 years old. In addition to attendance and dropout prospects, learning losses have also been affected. Evidence from Brazil showed that during pandemic-induced school closures, primary school students learned only 27.5 percent of what they would have learned during a normal year (Lichand et al. 2021).



Limited and Highly Unequal Skill Development

Before the COVID-19 pandemic, LAC had made considerable progress in high school enrollment. But increased access to education did not translate into corresponding gains in completion and learning, and evidence shows that learning is key. Skills development is not only an indicator of school quality but is also a better measure than years in school of human capital accumulation and predictor of economic development (Angrist et al. 2021). In 2018, only 37 percent of students in the lowest socioeconomic quintile graduated from high school, compared with 79 percent of the top quintile.

Among those who attend school, learning is limited. International assessments reveal that multiple deficiencies persist in basic reading and mathematics skills. Results from the 2018 international PISA test show that more than half (52 percent) of 15-year-olds lack basic reading skills, and an even larger proportion (69 percent) lack basic mathematics skills (Bos, Viteri, and Zoido 2019). This translates into a one- to four-year skill development delay of LAC youth compared with their peers in OECD countries. Skill development is not only low, but also highly unequal. Students from low-income, Indigenous, and Afro-descendent households lag behind their peers. In terms of learning, the proportion of youth from low socioeconomic levels that performed poorly (84 percent) was double that of students from high socioeconomic levels (40 percent).

In addition to low quality of instruction, violence and distress make learning challenging. Gang violence and organized crime permeate many communities, including schools. LAC accounts for 33 percent of the world's homicides with only 8 percent of the population, and young men account for almost half of the region's homicides (UNODC 2019). The disposition to learn decreases when personal safety is at stake (Caudillo and Torche 2014; Michaelsen and Salardi 2020). In some LAC countries, youth homicide rates double or even triple the national average homicide rate (Alvarado Mendoza and Tenenbaum Ewig 2020). Young men in LAC face more violence and crime than in any other region in the world, either as perpetrators, victims, or witnesses (UNODC 2019).



Once youth leave school, the transition to the labor market is difficult. Lack of access to decent employment is a reality not only for those who drop out, but also for youth with high school diplomas. In 2018, the unemployment rate among 15- to 24-year-olds was 18 percent, three times the adult rate and twice the average unemployment rate in the region. This lack of opportunities and excessive youth crime rates are likely drivers of the disproportionately high LAC youth migration levels. Youth between 15 and 29 years old account for almost half of the victims of homicides, and violence is geographically concentrated, with four countries accounting for 25 percent of the victims. Of the 40 million people who have emigrated from LAC, 14 percent were youth, compared with 11 percent in other world regions. In addition to the youth migration out of the region, millions migrate internally within LAC.

A vicious cycle of school dropout and migration. Evidence from migrants from Guatemala, Honduras, and El Salvador in the United States shows that the search for employment and low incomes are the driving factors in the decision to leave, and both are highly correlated with the level of education and employability of youth. In the United States, more than two-thirds of migrants from Honduras and Guatemala and one-third from El Salvador have not completed secondary education. Once a member of the family leaves, it affects the prospects of the minors who are left behind. Recent evidence from El Salvador shows that the migration of a member of the household has a negative effect on school attendance of the children who are left behind (Abuelafia, Ruiz-Arranz, and Del Carmen 2019).

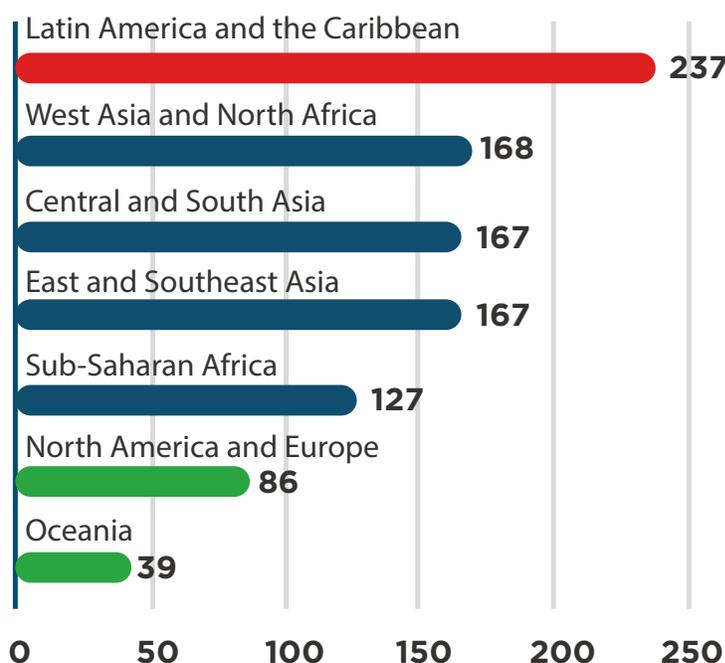


The Toll of the COVID-19 Pandemic on Youth's Education

The pandemic deepened the preexisting conditions and structural challenges within education. During one of life's most critical developmental periods, large numbers of youth have been deprived of education and exposed to increased levels of social, health, and economic insecurity, as well as domestic violence and abuse. The pandemic also worsened the school-to-work transition and the feeling of disenfranchisement among the young. The global health crisis exposed weaknesses in the economy which left millions of young people out of work or pushed them to poorly paid jobs with neither benefits nor stability.

Figure i.1

Total number of days without in-person classes (3/11/2020-12/31/2021)



Nota: The total number of days without in-person classes refers to the total number of school closures in the period between 11/03/2020 and 31/12/2021. The number of days specified does not include partial closures, vacations or weekends. Latin America and the Caribbean was limited to the 26 countries of IDB Latin America.

Source: Calculation of days without in-person classes based on the daily status database of Unesco countries (2021), data obtained from <https://en.unesco.org/covid19/>

Despite quickly launching remote education measures, LAC has lost more school days than any other region in the world. Key factors that made the transition to remote and hybrid learning more challenging than in better-prepared education systems included lack of digital infrastructure (with only 22 percent of households having internet access and only 19 percent having a computer) and limited teacher experience in remote and hybrid learning (Rieble-Aubourg and Viteri 2020).

An Income, Gender, and Geographic Divide. Another startling pattern was the unequal effect of the pandemic across income, gender, and geography. In rural areas, available data suggests that few students had access to online learning platforms, with many reporting that they were unable to study because they did not have a computer, tablet, or mobile phone. In LAC's lowest socioeconomic quintile, where Indigenous and Afro-descendant students are overrepresented, 29 percent had access to a computer versus 94 percent in the richest quintile. Although data is not yet available from LAC, international studies suggest that students with disabilities were at a particular disadvantage, with more limited access to education technologies and academic support.

A Devastating Impact on Learning and Education Completion. Given these challenges, it is perhaps not surprising that LAC youth report that they dedicate less time to studying now than they did before the pandemic. Household surveys from some of the wealthiest countries in the region show that half of the students did not participate in any learning activities or had no interaction with teachers during the height of the pandemic. In poorer countries, the situation is likely worse.

In Brazil, the first piece of rigorous evidence from a study in Sao Paulo showed learning losses equivalent to between half to two-thirds of a normal school year, with low-income students losing the most (Lichand et al., 2021). This data is particularly relevant if we consider the initial conditions pre-pandemic: Brazil was one of the LAC countries that experienced significant improvements in learning outcomes between 2013 and 2019, in a context in which most countries did not improve, and a few experienced a decay, according to the UNESCO Institute for Statistics database.

Research indicates that students who have missed that much school are at much higher risk of permanently abandoning their education. The lack of face-to-face contact with teachers and peers can create a self-reinforcing cycle of self-doubt and reluctance to study. Therefore, the risk of youth dropout has radically increased.



A Tragic Reversal of Decades of Sustained Progress. The negative effects were significantly concentrated in girls, Indigenous and Afro-descendent students, and in schools located in the poorest neighborhoods that did not offer online academic activities before the pandemic. Evidence from Mexico shows that while all youth saw an increase in domestic chores assigned to them, the number of hours that 15- to 17-year-old girls spent on domestic activities (such as cleaning, cooking, or caring for younger children or the elderly) increased more dramatically than for other groups (Acevedo et al. 2021). This is a tragic reversal of decades of sustained progress in reducing the gender gap in education. In addition, adult active participation in the labor market was also affected by school closures, with a higher toll on women since they tend to be the main caregivers (Bustelo et al. 2019; Frisancho and Vera-Cossio 2020; Fabrizio, Gomes, and Tavares 2021). In addition, the shutdown disproportionately affected female labor force participation, both in the intensive and extensive margins, and its recovery has also been slower (Lopez, Ruiz-Arranz, and Ochoa 2021; López-Calva 2021; Higa, Ospino, and Aragón 2021).



Youth were not only deprived of learning new concepts and skills, but also lost knowledge and skills that they previously mastered. Although few education systems have data on pandemic-related learning losses, those that do show devastating losses, equivalent to as much as an entire year of schooling. This suggests that learning losses in LAC are likely greater than those in education systems that reopened schools faster or were more prepared to switch to a remote learning system; in the United States, a comprehensive study shows losses in mathematics and reading equivalent to about half a year of schooling, and a study in Denmark found no evidence of any learning slides in grades 2, 4, and 8 (Birkelund and Karlson 2021; Donnelly and Patrinos 2021).

School closures interrupted a central piece in the supply chain of social services. Experiences from around the world show that schools were not the places for disease transmission; most recent evidence from Brazil shows that reopening schools during the pandemic did not increase COVID-19 cases or deaths (Lichand et al. 2022). However, school closures were broadly used as part of the strategies to control the spread of the virus. Schools are much more than “skills for work factories.” More than any other place, schools serve a central role in the lives of families and communities as the spaces where different social services are provided—from vaccines, school meals, cash transfers to families, and financial assistance, to socio-emotional support, care, and skill development. Consistent with this role, evidence shows that school output is multidimensional: not only do schools produce academic results and socio-emotional skills development, but they impact long-term productivity through non-academic outcomes such as health, criminality, adolescent pregnancy, and employment. Even more interesting, schools that are good at improving academic outcomes are not always good at reducing risk behaviors like crime or early pregnancy, or at improving students’ chances of labor market success (Beuermann et al. 2022).



A Pressing Need to Invest More—and Better—in Education

The pandemic-induced education disengagement and learning losses have led to increased inequality both within and among countries. The most ineffective and unequal education systems were less prepared to shift to remote and hybrid education models, making them more profoundly affected by the shock of the pandemic.

Worldwide, literature shows that loss of cognitive skills and educational attainment has broad-ranging consequences, not least for economic growth. Our analysis shows that LAC youth will have a decrease in annual earnings of between US\$15,000–30,000 during their lifetimes due to lower education achievement. This translates into a US\$760 billion impact on the LAC economy, equivalent to as much as 17 percent of the GDP.³ The consequences may not be obvious in the short term but will have an impact on the quality of life of future generations. When youth fail to develop the skills they need for success in school and life, it will impact their future employment, wealth, and well-being. Beyond economic growth, in this publication we also describe how the projected drop in GDP would impact income distribution and intergenerational transmission of poverty and inequality and could also potentially trigger social unrest.

The message is clear: the costs of inaction are too great. We cannot miss this opportunity to reverse learning losses and reengage youth. Although the challenge is unprecedented, by drawing on the talent, expertise, and commitment of educators and policymakers from across the region, LAC can go beyond merely a return to the pre-pandemic status of education (Álvarez et al. 2021). We call on decision makers to seize this window of opportunity to invest in the skill development and well-being of youth, laying the foundation for the prosperity of the LAC region for generations to come.

Spend More, Spend Better. The pandemic has increased the levels of poverty and inequality in the region. Public spending in that context needs to act as a buffer to the shock that the most vulnerable individuals have received in their income and in access to basic services. Resilience at the societal level means investing when and where it is most needed. Efficient and equitable investments in a context of fiscal restrictions have implications for the structure of fiscal policy and its redistributive effects. Low levels of spending, combined with high inefficiencies and poor targeting of programs, decrease the equalizing effect of public spending. Evidence from Mexico and Central America shows that investments in education and health are the best tools to improve the redistribution of income and to reduce inequality (Lopez et al. 2020).

3. 2018 GDP value.



Regional average educational public spending has slowed since 2017 according to [World Bank Indicators](#). Preliminary surveys indicate that the trend has deepened in the last two years due to a reallocation of resources to address the health crisis and has created a buffer for the impact of the economic crisis. Public resources assigned to education fell during this period by 0.4 percentage points (approximately US\$45 billion).

In the short term, the resources needed to rehabilitate schools and ensure a safe return to school are estimated at US\$23 billion, which represents 0.21 percent of the region's GDP. But the region faces the dual challenge of responding to the emergency and improving its education systems. Our estimates indicate that the total investment required, combining short-term response and transformation of education systems over the next 10 years, will be around US\$221 billion, including investment in infrastructure and equipment. If we focus only on spending dedicated to improving retention and learning, the average expenditure will increase by US\$1,200 per student. This will represent reaching an average investment of 5 percent of regional GDP,⁴ bringing LAC's investment closer to the average of more advanced economies.

Adding resources is not enough; with more spending needs to come better spending. Several policies can help eliminate waste in education and improve the levels of efficiency and equity of the system. For example, governments spend significant resources every year managing the applications of millions of students and teachers in individual schools. These processes lack transparency and generate inefficiencies and inequities in the allocation of crucial resources. Implementing policies to reduce the budgetary waste of current allocation systems can be highly cost-effective while producing better outcomes for students and teachers (Elacqua et al. 2022).

4. 2018 GDP value.

A Call to Action: Taking Education Where It Needs to Be

We conclude this publication with a call to action. The shock of the pandemic has profoundly changed not only the lives of youth, but the entire education context. In this situation, we cannot expect that the same education policy toolkit that failed to develop effective lifelong learners in the past will serve to tackle the now even wider spectrum of education challenges of the LAC region. Preventing the consequences of the combined effects of structural challenges and the pandemic will require both immediate actions and a medium-term strategy. After a careful review of scientific knowledge and evidence-based tools from diverse fields, four areas of education policies and actions emerge to guide education practitioners and policy makers as they tackle the daunting challenge of youth skill development and well-being in the COVID-19 era.

Reengage the masses of LAC youth that have lost contact with their schools during the pandemic, ensuring that they complete their education and career pathways. In the short-term, it is imperative to reopen all schools and launch systematic efforts to trace and reengage with every single student. A myriad of factors causes students to disconnect from school, including financial stress, sibling caretaking responsibilities, mental health challenges, or the digital divide. Administrators should prioritize the most high-risk students, using aggressive social interventions to ensure that they return to class. A key part of student reengagement involves strategies to transition from virtual to in-person learning. Strong evidence supports using student bubbles that give students the opportunity to socialize without exposure to massive crowds. Other evidence-based strategies include school attendance shifts where students take turns having face-to-face instruction; outdoor instruction; as well as face masks, vaccinations, and social distancing protocols.

Reengagement strategies must include both preventing student dropout and tracing and bringing back students that have already left. Education systems must prioritize (1) early warning detection systems to identify students at risk of dropping out; (2) active search and tracing of disconnected students in collaboration with community and civil society organizations, using digital tools as well as home visits; and (3) timely interventions combining school-based actions such as tutoring, mentoring, and socio-emotional support, as well as financial support and home interventions implemented by partner organizations.



Close the digital divide, produce high quality on-line content, and digitally transform education systems. Technology is embedded in most of our economic activities, so having access to devices and connectivity is not a “nice to have” but a “must have” for schools and students. However, given that disparities in access to technology are correlated with socioeconomic status, the digital divide can replicate and even reinforce existing segregation patterns. The digital transformation of education has enormous potential to foster learning. Technology adoption for learning enhances both traditional group instruction as well as self-paced learning and more individualized experiences. The use of technology in the school setting also helps to overcome capacity constraints to offer support outside of school hours and leverages students’ engagement while equipping them with digital skills.

The COVID-19 crisis pushed governments to invest in hybrid learning technologies and embrace new teaching methods. This could turn the crisis into an opportunity to ensure both an immediate recovery from the effects of the pandemic and a permanent digital transformation of their education systems. Governments should prioritize investments in the following:

1. Access to devices and high-quality internet connectivity to break student and school isolation, allow teachers to share multimedia content, and open channels for collaborative interactions within the school community.
2. High-quality content, teacher training, and effective pedagogies adapted to virtual and hybrid learning environments with tools to monitor student progress; one-stop-shop sites of instructional content are more effective to facilitate learning when made accessible through different devices like mobile phones and computers (Arias Ortiz et al. 2020).
3. Targeted instruction instead of teaching to the middle student; technology-based learning facilitates instruction tailored to each student's needs and performance level and provides the possibility to simultaneously teaching for heterogeneous learning levels effectively at a lower cost (Escueta et al. 2020; Bray and McClaskey 2013).

"The crisis pushed governments to invest in hybrid learning technologies and adopt new teaching methods. This could become an opportunity to ensure recovery from the effects of the pandemic and a permanent digital transformation of education systems."





Accelerate learning for all. In LAC, the traditional response to unfinished learning is remediation, where students study the same content they did not master the first time it was taught. In its most extreme form, students repeat entire academic years. Given the scant evidence of any effectiveness for this type of remediation, and given the scale of unfinished learning post-pandemic, it is not feasible to have a majority of students repeat multiple academic years. In this context, we recommend adopting accelerated learning for all students. Acceleration does not mean teaching the same content faster, but rather focusing on core concepts that students need to progress at grade level and while providing targeted scaffolding.

To accelerate learning, we recommend that governments prioritize the following:

1. Teach grade-level curricula despite learning gaps from prior grade levels.
2. Identify core skills from prior grade levels that are needed to access grade level content.
3. Provide just-in-time support in the development of core skills from previous grade levels to allow students to access the curricula that correspond to their grade levels. This means that accelerated learning is sometimes slower than regular grade-level instruction; a mathematics curriculum unit that normally takes two weeks may instead take three weeks to address learning gaps.
4. Support the work of teachers by providing tutoring for the students most in need to facilitate just-in-time support. Accelerated learning can include grouping students within the classroom by their levels of proficiency and making it easier for educators to focus on skill development. Since traditional face-to-face individual tutoring is costly, we recommend seizing the opportunity provided by recent massive investments in education technologies across the LAC region to explore remote and technology-based tutoring models.

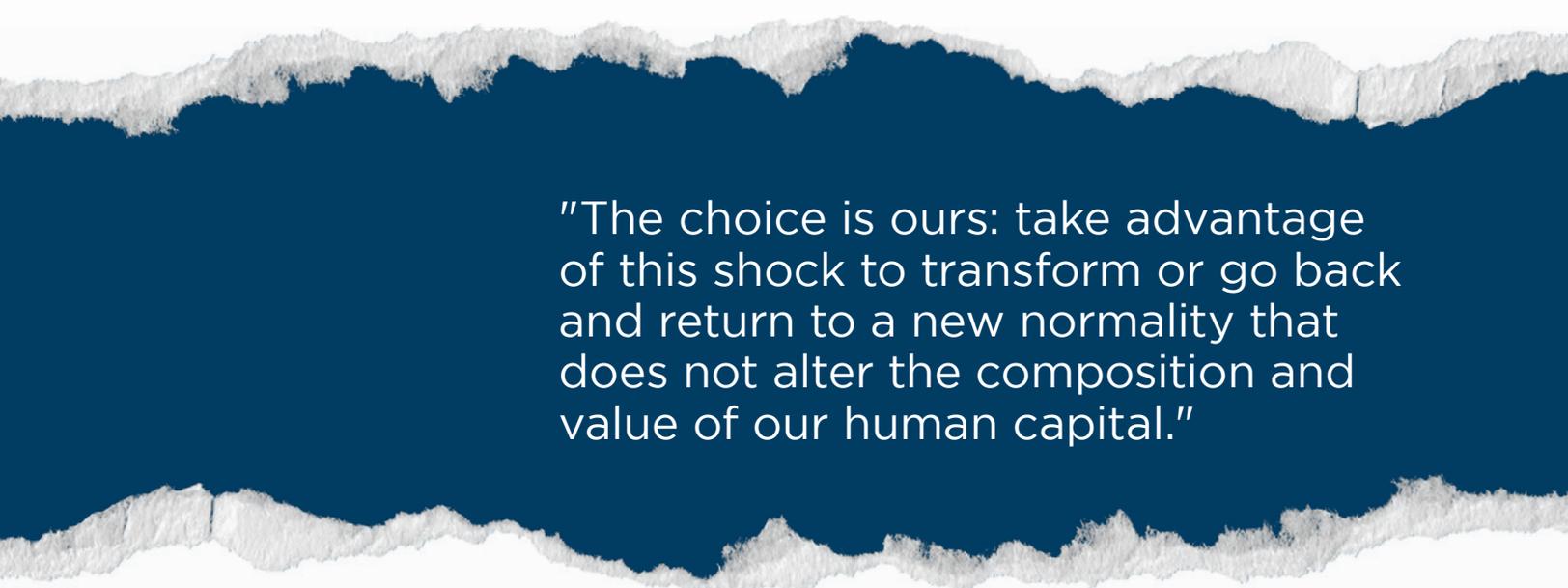
In response to unprecedented levels of youth isolation, trauma, and depression, prioritize safe and nurturing learning environments. Throughout the region, schools are struggling to respond to an impending mental health crisis at the same time as they are under great pressure to complete historic levels of learning loss due to school closures. Education systems should act on the following:



1. Prioritize early identification and interventions before mental health challenges escalate. The most evidence-based model for school-based mental health services is the Multi-Tiered System of Supports (MTSS). As the inherent stress of being a teacher was exacerbated in recent years by anxieties about COVID-19 and related lockdowns, in this publication we expand the MTSS model to include support for the mental well-being of teachers. Such support should include preventive mental health services for teacher, including structured opportunities to discuss challenges with fellow educators, as well as counseling when needed.

2. Reduce the prevalence of school-based violence and bullying to ensure safe and nurturing school and classroom environments. Positive school climate policies require engaging the entire school community from students and school administrators to parents and community organizations and authorities. Interventions must target victims and perpetrators, and monitoring mechanisms have to be in place to supervise and report school-based violence and bullying.

In a context of profound and pervasive inequality, education has been for too long a broken promise to a better future for generations of LAC young people. It is time to break the course and start a new beginning. The pandemic highlighted the structural challenges of the region's education systems and broke the inertia. It is now or never; we can choose to use this shock to transform or to return to a new normal that will not alter the composition and value of our human capital. Going back to pre-pandemic systems will shoot down our chances to offer a more resilient and prosperous future for these generations. If we do not deliver on our promises as societies, we cannot expect prosperity, trust, social cohesion, and a peaceful coexistence in the region. And delivering starts by taking this challenge seriously and investing more—and better—in education.



"The choice is ours: take advantage of this shock to transform or go back and return to a new normality that does not alter the composition and value of our human capital."

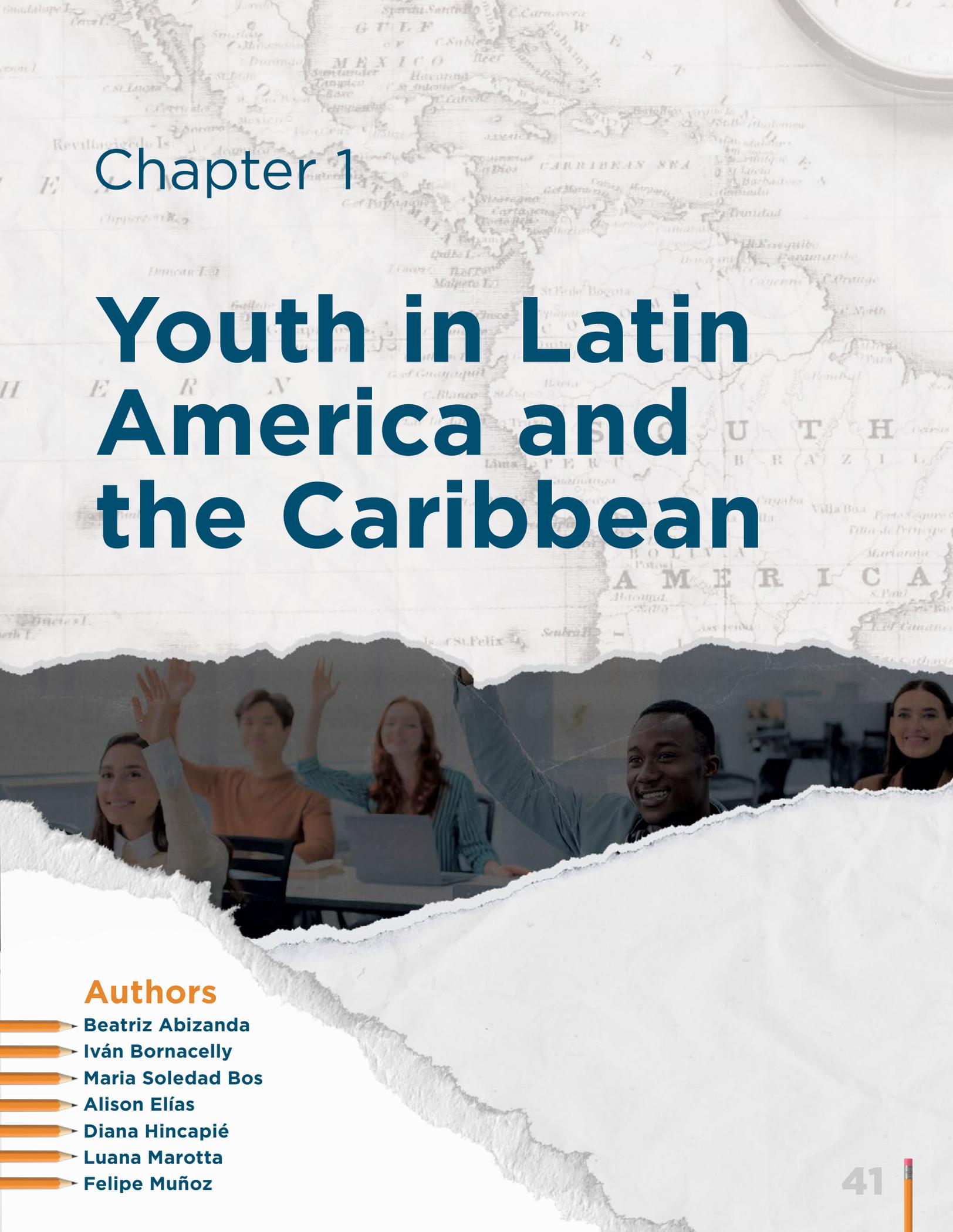


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Chapter 1

Youth in Latin America and the Caribbean

Authors

 Beatriz Abizanda
 Iván Bornacelly
 María Soledad Bos
 Alison Elías
 Diana Hincapié
 Luana Marotta
 Felipe Muñoz

Adolescence is a crucial stage in the development of young people. It is a period in which they must develop the necessary skills to reach their full potential and perform actively and satisfactorily in the economy and society. It is also an important stage for the development of cognitive control and higher order executive functions that allow the maturity of self-regulation skills, which are key to avoiding high-risk behaviors (Steinberg et al. 2009; Spear 2009; Albert and Steinberg 2011). But it is also a challenging period in their lives during which they must take on new responsibilities and prepare to enter the job market. **For all these reasons, their passage through the education system is key to developing the competencies and skills necessary to contribute productively to the economy and society, increase their well-being, and become participatory citizens.** Fortunately, attendance of young people in secondary education has increased in almost all Latin American and Caribbean (LAC) countries. However, not all these students achieve successful educational trajectories, which is why we observe high dropout and underachievement rates, especially among the most vulnerable young people. The quality of education is still a pending challenge that considerably affects learning and successful labor market insertion.

Today, more than ever, young people in the region have more tools, knowledge, and information to make decisions. However, not all have the skills and competencies to make use of these tools or know how to navigate the abundant information that's available. To this end, education systems play a key role not only in preparing young people with the necessary skills and competencies but also in guiding and accompanying them in the decision-making process and related challenges.

"Education systems play a key role not only in providing young people with key skills and competencies, but also in guiding and accompanying them in the decision-making process and the challenges that this implies."

The objective of this chapter is to provide an overview of the current situation of young people in LAC. The first part emphasizes the socioeconomic challenges they face that may affect their decisions, their employment opportunities, and educational trajectories. We show how high levels of inequality, poverty, and lack of opportunities limit available options and encourage risky behaviors, especially among the most vulnerable youth. We also discuss how distrust of the political class defines their priorities and role in society. The second part of this chapter outlines how education systems have evolved, highlighting the advances in coverage and the challenges that persist in terms of quality and equity, which especially affect young people in the most vulnerable environments.



Youth in figures

The population of LAC is estimated to be approximately 653 million; people between ages 15 and 29 account for a quarter of the total (CEPAL 2021). In addition, the region is experiencing a demographic transition in which the number of working-age people has grown more than the number of people of inactive age. This transition represents a significant opportunity for the region: it means that a greater percentage of its population now has the capacity to work and be productive. In this phase, young people are the main players. However, many of them face adverse socioeconomic conditions that pose significant obstacles to reaching their full potential.

"The LAC region is in a good moment demograph, because the percentage of its population of working and productive age has grown proportionally more than the number of people of inactive age. However, many young people face adverse socioeconomic conditions that impose significant obstacles to reaching your full potential."

Poverty and inequality

The first such barrier is the growing poverty and inequality in the region. Poverty affects almost one-third of youth in the region. In 2018, 31 percent of 15- to 29-year-olds in urban areas lived in poverty, with almost 10 percent in extreme poverty. These figures are considerably higher than the poverty and extreme poverty levels observed in the overall population, which stand at 26 percent and 8 percent respectively (CEPAL 2018). Youth poverty is even more concerning in rural areas: approximately 49 percent were in poverty and 21 percent in extreme poverty in 2018 (UN 2021). Young people between ages 15 and 19 are the most affected by the high levels of poverty and inequality in the region (ECLAC n.d.). This is a critical age, because young people living in vulnerable conditions face greater barriers to accessing quality educational services and are more likely to drop out of school than their peers in better socioeconomic conditions. These gaps have repercussions on opportunities and well-being in later stages of life.

Young people in Latin America and the Caribbean are the most affected by the high levels of poverty and inequality in the region

Young people from 15 to 29 years old

2018		Urban area	Rural area
	Conditions of poverty	31%	49%
Extreme poverty	10%	21%	

Lack of access to decent employment is also a reality for a large proportion of young people in LAC. In 2018, the urban unemployment rate among 15- to 24-year-olds stood at 18 percent, a percentage three times higher than the rate for adults and twice the average unemployment rate in the region (ILO 2020a). The level of informal employment was also higher than that for adults. Nearly 63 percent of young people were in informal employment compared with 53 percent of adults, i.e., nearly 30 million young people worked in precarious jobs, with low incomes, or without protection or rights. Unemployment and informal employment levels among young people were further compounded during the COVID-19 pandemic. According to recent data from the International Labor Organization (ILO 2020b), the youth unemployment rate in the region reached 24 percent in the first quarter of 2021—the highest level since records began—meaning that between two and three million young people have left the labor force. Those who manage to stay employed do so mainly in the informal employment sector (70 percent). In 2020, young people ages 15 to 24 recorded the highest rate of transition from formal to informal employment¹ in the entire population (Acevedo et al., 2021).

Youth unemployment and informality became even more complicated during the COVID-19 pandemic

Young people from 15 to 24 years old

2018

Urban area

Tasa de desempleo | **18%**

Nivel de informalidad | **63%**

First quarter of

2021

Unemployment rate | **24%**

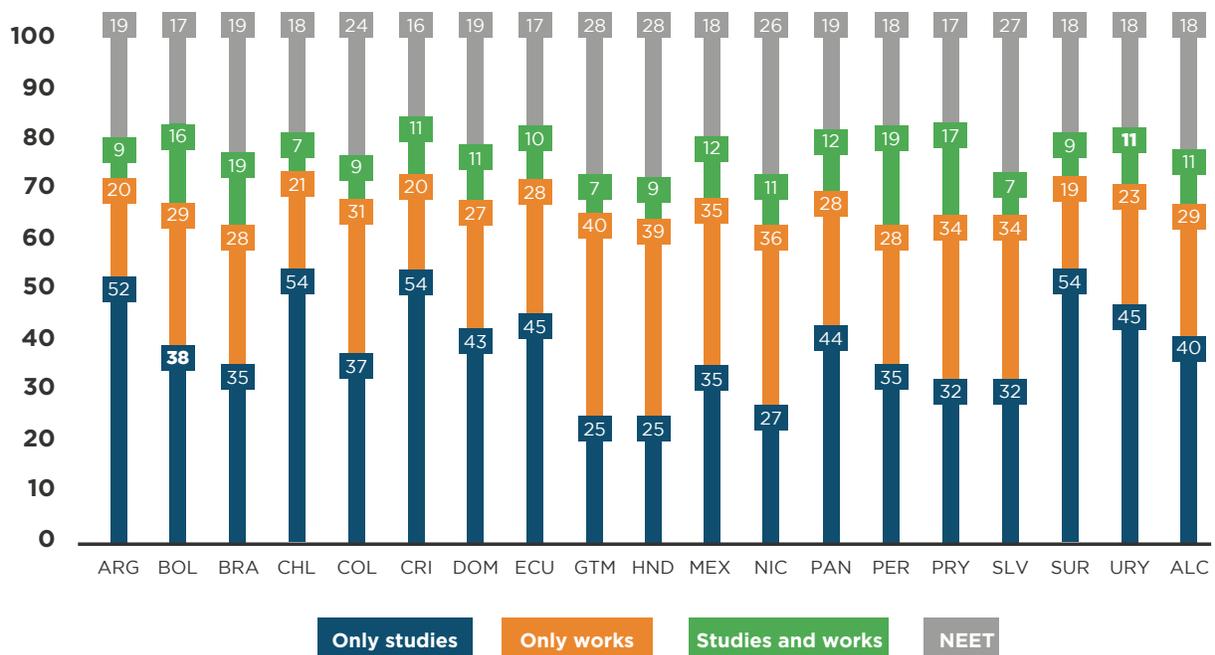
This implies that between 2 and 3 million young people have left of the workforce.

¹. Percentage of change in the number of young people formally employed and the number of young people informally employed, as compared with other age groups and the total population.

Furthermore, **many young people in LAC are not engaged in employment, education, or training—commonly referred to as NEET.** In 2019, about 20 percent belonged to the group of young people who neither study nor work (See Figure I.1). According to data from the Millennials survey (Rucci et al. 2018), the proportion of NEET women is double the percentage of men in this situation. This could be related to the greater contribution of women to the household economy and household chores, and the higher proportion of pregnant adolescents. In fact, the same survey shows that NEETs in LAC are engaged in work that is valued by the people around them: 64 percent of NEETs are engaged in caring for family members, and almost all (95 percent) perform domestic work or help in their families’ businesses. The high proportion of NEETs in the region appears to be due to a low level of cognitive and noncognitive skills among young people as well as a low aspirational level (Alvarado et al. 2020).

Graph 1.1

Educational and employment status of young people ages 15–24 in LAC countries (%), 2019 or latest available year



Nota: Inter-American Development Bank, Harmonized Household Surveys of Latin America and the Caribbean.

Source: For most countries, the reference year is 2019. However, for Chile (2017), Mexico (2018), Nicaragua (2014), and Suriname (2018), the latest year available is used.

Risk behaviors: criminality and teenage pregnancy

Many young people in the region engage in risky behaviors; in a context of low expectations for the future and a vulnerable social and family environment, this can lead to criminal activity and teenage pregnancy,. Young people at this age are more inclined to experimentation and risk-taking. It is also a stage where neuropsychological processes are developed for building key behavioral skills, such as risk assessment, control of impulsivity and emotions, and the ability to assume responsibility (Alvarez-Alvarado and Tenenbaum 2021). Another important influence on the propensity of young people to engage in risky behaviors is their social environment, characterized by lack of preventive information or information about possible consequences, little capacity to assimilate and filter the available information, monetary restrictions, and limited access to services (Cunningham et al. 2008; Moreno et al. 2009; Näslund-Hadley and Binstock 2013). In Colombia, for example, it is evident that two out of every three young people between ages 13 and 16 have already drunk alcohol or smoked (63 percent), and one out of every ten young people has a friend who belongs to a gang (9 percent). These risks are significantly higher for young people from households with little wealth and in rural areas (ELCA 2017)



According to data from the United Nations Office on Drugs and Crime (2019), criminal violence is one of the biggest challenges in LAC, where 33 percent of the world's homicides occur with only 8 percent of the global population. Worldwide, it is mainly young men who are the protagonists of violence and crime, whether as perpetrators, victims, or witnesses. In our region, young people between ages 15 and 29 account for almost half the victims of homicidal violence, which is concentrated in a few countries in the region particularly affected by violence (25 percent of the victims come from only 4 of the 27 countries in the region). The incidence of homicidal violence in countries with a prevalence of criminal groups with strong youth membership such as gangs (e.g., Mexico, Brazil, the Northern Triangle countries, among others) is worthy of special mention. Furthermore, as Table I.1 shows, youth homicide rates in some countries are double or even triple the national average homicide rate (Alvarado Mendoza and Tenenbaum Ewig 2020).

Table 1.1

Comparison between homicide rates per 100,000 inhabitants (total population and population ages 15–29) in LAC countries, 2015

	General population	Population ages 15 to 29	Difference
Paraguay	9,3	29,3	20
Chile	3,6	23,6	20
Peru	7,2	26,4	19,2
Haiti	10	29,2	19,2
Ecuador	8,2	26,6	18,4
Nicaragua	11,5	28,9	17,4
Bolivia	12,4	27,6	15,2
Uruguay	8,4	22,2	13,8
Costa Rica	11,8	25,5	13,7
Panama	11,3	24,6	13,3
Mexico	16,5	26,7	10,2
Dominican Republic	17,4	26,4	9
Barbados	10,9	19,2	8,3
Guyana	19,4	27,2	7

Source: Alvarado Mendoza and Tenenbaum Ewig 2020

Surveys and prison censuses in 14 countries in the region reveal significant characteristics of the life context of these young people involved in crime, particularly their educational background (Alvarado and Vélez-Grajales 2019). While the average age of inmates is 34, the average age at first conviction is 22. Moreover, 85 percent of those deprived of liberty did not finish high school, and most of them left the educational system at age 15.



Violence in the domestic sphere, including violence against intimate partners, family members, and close associates, is one of the types of violence that most affects women in LAC. This greater impact on the female gender is related to the association of violence with masculinity and the dynamics of power imbalance; these manifest themselves in physical, verbal, or psychological aggression (Tsapalas et al. 2020) and often end in sexual abuse and unplanned pregnancies (Asling-Monemi et al. 2003; Campbell, García-Moreno, and Sharps 2004). Recent WHO estimates indicate that 10 percent of women ages 15-29 in the region have been victims of physical or sexual violence at the hands of their intimate partners in the past year, compared with a global average of 8 percent (World Health Organization 2021). Although regional averages are high, prevalence varies considerably among countries in the region. Depending on the country, between 17 percent and 53 percent of women report having been victims of intimate partner violence at some point in their lives (IDB 2021), **with considerable consequences for the educational and professional development of women. Nearly 80 percent of the women who report having been victims of violence suffered from a negative impact on their work and studies** (OCDE, 2021), with more absenteeism, lower productivity, and worse school performance for those who were studying.

Adolescent pregnancy is also one of the major problems facing women in the region. The adolescent fertility rate in LAC is one of the highest in the world, second only to sub-Saharan Africa (see Figure I.2). Overall, the teenage pregnancy rate in LAC countries was estimated at 61 births per 1,000 girls ages 15-19 in 2019, with a significant gap between young people of different socioeconomic levels: the percentage of adolescents in the bottom wealth quintile who begin childbearing is between three and four times higher than those in the top wealth quintile (UNICEF 2019). Pregnancy impacts not only the social, educational, and economic development of young women but also their health. Maternal mortality is one of the leading causes of death among adolescent girls ages 15-24 years in the region. In 2014, nearly 1,900 young females in LAC died because of health problems during pregnancy and postpartum (UNICEF 2019).

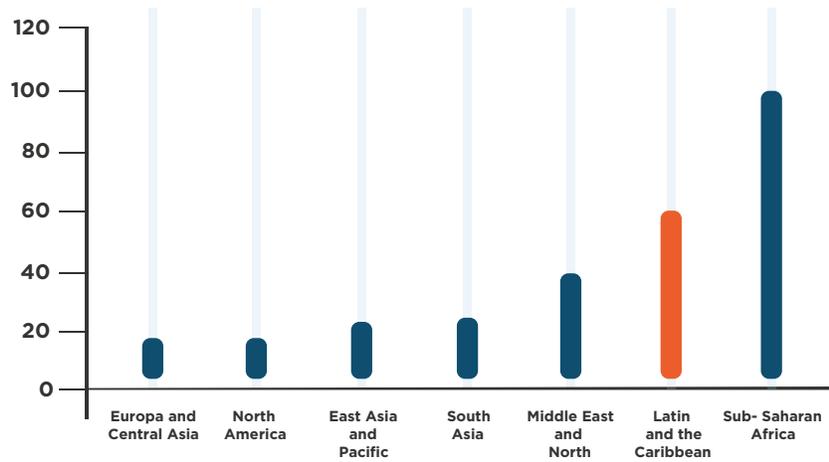


Graph 1.2

Adolescent fertility rate in different regions of the world and LAC countries, 2019

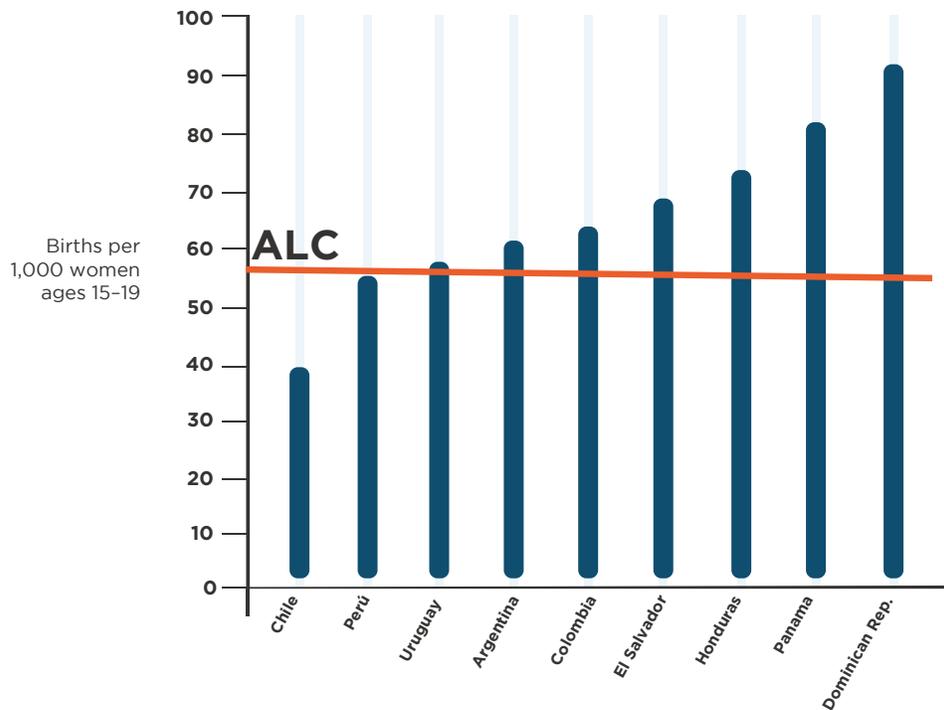
Panel A.

Adolescent fertility rate by region, 2019



Panel B.

Adolescent fertility rate by LAC country, 2019



Source: World Bank Indicators.

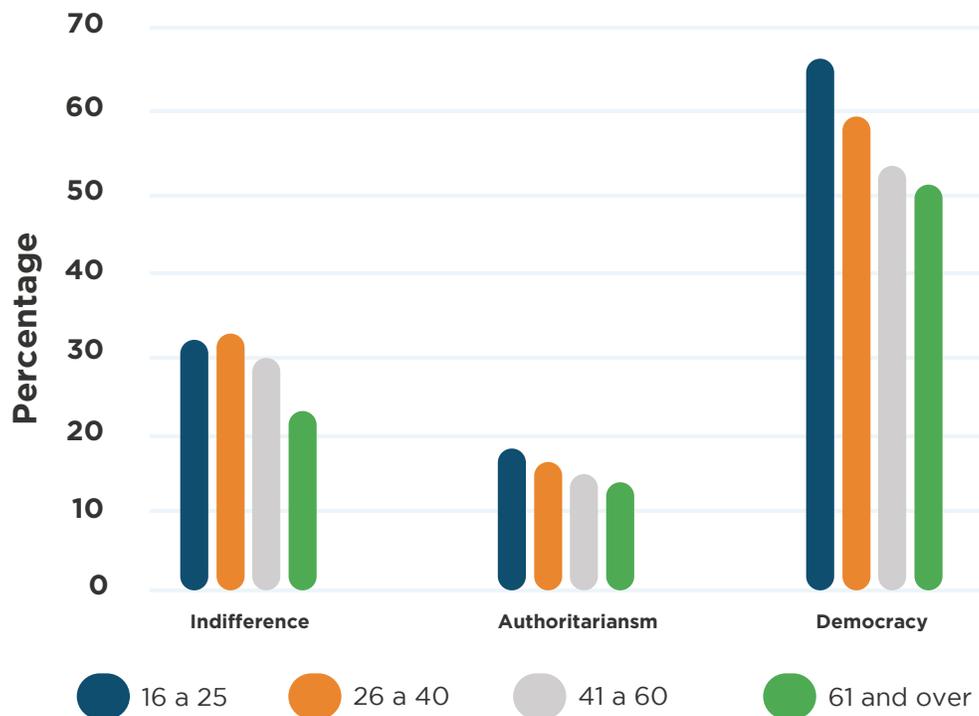
Political and social commitment

These social and economic barriers do not prevent young people in LAC from being active citizens. In recent years, young people in various countries in the region have gathered and organized to protest and express their discontent with the situation in their countries. Their claims are diverse. At times, as in Venezuela, Nicaragua, and Bolivia, they have protested the lack of democracy; at others, as in Chile and Ecuador, the issues are lack of opportunities and social inequalities. In all these manifestations, the presence of young people has been a common denominator, facilitated by their use of the internet and social media.

Although some young people in LAC have played an important role in bringing about social change, it is observed that young people are increasingly dissatisfied with democracy—not only in absolute terms but also relative to other age groups (Foa et al. 2020). Data from the 2021 Latinobarómetro (an annual public opinion survey conducted in Latin America) show that most young people under age 25 prefer democracy to any other form of government. But the same generation also believes—in a higher proportion than older adults—that an authoritarian government may be preferable to a democratic one in some circumstances (Latinobarómetro 2021).

Graph 1.3

Support for democracy by age group, 2020



Source: Latinobarometro

Migration

Faced with a lack of opportunities and dissatisfaction with their countries, many young people in the region have migrated in search of better living conditions. It is estimated that there are 14.8 million migrants in LAC, of whom 14 percent are young people between ages 15 and 24, or 1.9 percent of the total number of young people in the region (PAHO 2018). This proportion combines voluntary and forced migration. For some countries in the region, the latter has gained preponderance in recent years in response to the political situation, poverty levels, and economic instability, as in the cases of Venezuela, Haiti, Nicaragua, and countries in northern Central America (IOM 2020).



Particularly for the younger population, forced migration can have important implications, not only because of the level of vulnerability in which they leave their country but also because of their stage of life, which makes them more likely to face isolation, exclusion, discrimination, and insecurity in receiving countries. Young migrants often lose their contacts and social capital and arrive in places far from the care and guidance of their parents or other relatives. **Young people in an irregular migratory situation are particularly exposed to violence, exploitation, trafficking, detention, and deportation.**



Box 1.1 The vicious cycle of school dropout and migration in the Northern Triangle

Migration and education are linked through a multitude of channels. Education is a factor that determines the decision to migrate, and migration has an impact on educational decisions in the migrant's household.

The causal relationship is not always clear, but in some countries, such as Honduras, Guatemala, and El Salvador, high levels of school dropouts and NEETs (young people who neither study nor work) converge with high rates of migration. School closures and loss of income resulting from the COVID-19 crisis and the natural disasters that struck Central America in 2020 have exacerbated these trends, with thousands of young people leaving not just classrooms but also their countries of origin in search of better economic opportunities.

An IDB survey of recent migrants from the Northern Triangle in the United States confirms that job search and low income are key factors in the decision to migrate, both highly correlated with the educational level and employability of young people. More than two-thirds of Honduran and Guatemalan migrants in the United States and one-third of Salvadorans have not completed high school. Migrants from the Northern Triangle, although more educated than the average person in their country of origin, tend to be low-skilled compared with other migrants in the United States.

The migration of a household member also affects the education and prospects of the children and adolescents who remain in the household. On the one hand, if the household receives remittances, these can help defray the costs associated with education. On the other hand, the absence of a family member may reduce the supervision and support that these children receive in their education process. In addition, when an adult migrates, minors or young people may have to assume some of the tasks, paid or unpaid, that were previously performed by the migrant, and this could have a negative impact on the time dedicated to their education. At the same time, the migration of a family member may generate the prospect of eventual migration of the children, which may affect the household's and the children's own interest in education—depending on how valuable it is in the destination country.

Source: Herrera et al., 2022.

Educational opportunities for youth in LAC

In addition to a worrying social and economic situation, many young people in LAC face great challenges in the field of education. While today's youth have higher levels of education than previous generations, the structure of educational opportunities is still unequal, and not all young people have access to quality education. The expansion in school coverage over the last 20 years has not always translated into improvements in the quality of education, and many young people—especially those in the most vulnerable environments—still face challenges in developing the minimum skills and competencies required to perform well in the labor market and in society.

"The expansion of school coverage in recent years has not necessarily translated into improvements in the quality of education. Many young people still face challenges in developing the minimum skills required to perform well in the labor market and in education. society."

Increased access to education

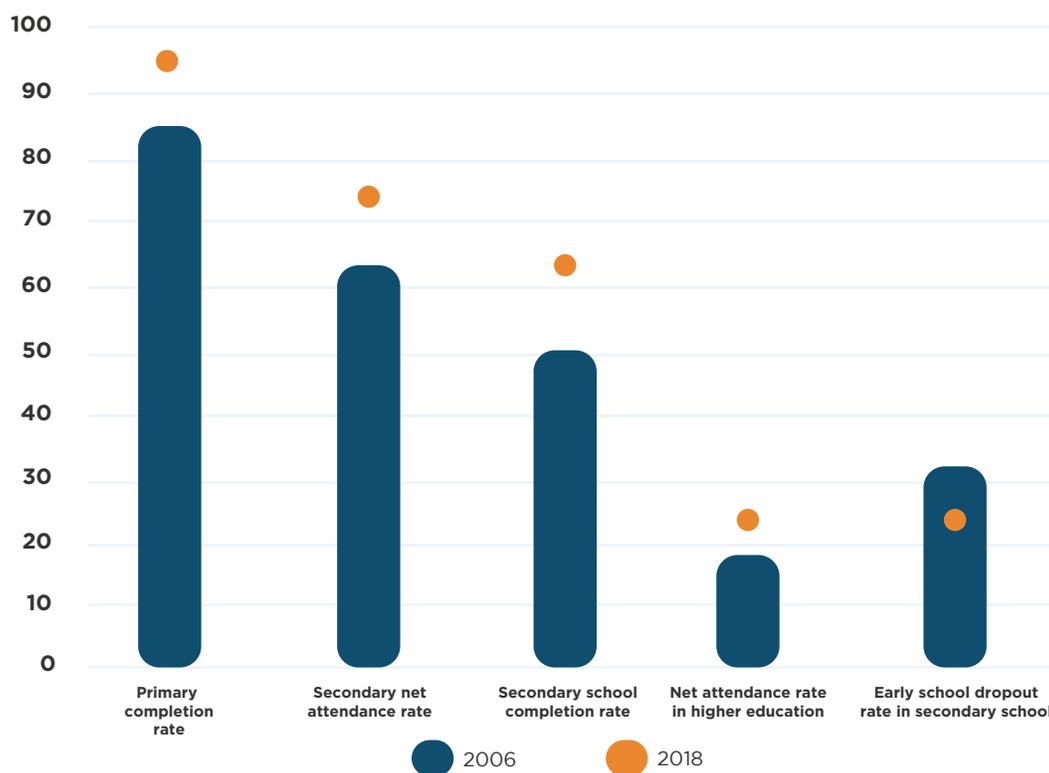
Today, young people in LAC have more years of education than ever before. For example, in 2019 a young person between ages 12 and 26 managed to accumulate on average almost ten years of education compared with an average of eight years in 2000. This positive trend is mainly the result of significant improvements in student access and retention in the educational system, which have translated into a greater number of young people completing basic education.

The fact that more young people are attending secondary education is mainly due to a higher proportion of students successfully completing primary education. In 2019, nine out of ten children completed primary education, compared to eight out of ten in 2006 (CIMA 2021). This has led to the proportion of young people attending secondary education rising from 63 percent in 2006 to 75 percent in 2018 (CIMA 2021). Educational reforms implemented since 2005 promoting compulsory basic education have been fundamental in boosting school attendance, as has been the case in Argentina, Brazil, and Chile (Perez and Leal 2011).

At the same time, the region’s education systems have succeeded in ensuring that more and more young people are able to stay in school and complete their secondary education. Today, 65 percent of young people graduate from high school, compared with 50 percent in 2006. Although secondary school graduation levels are quite heterogeneous among countries in the region, in all cases they have increased substantially (see Figure I.4 and Figure I.4).

Graph 1.4

Main education indicators for LAC, 2006 and 2018

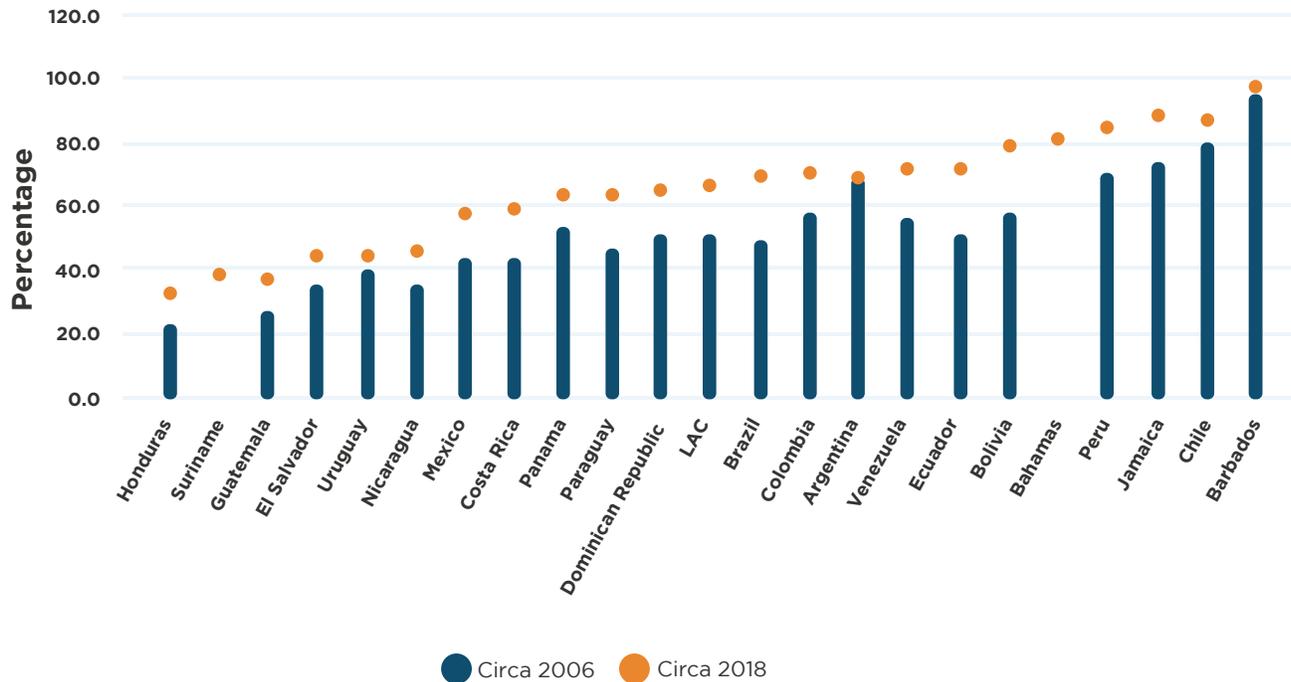


Nota: The LAC average is presented for the countries for which information is available for each year (2006 and 2018). The completion rate is the percentage of young people between three and five years older than the theoretical age for the last grade of education at each educational level (primary or secondary). The attendance rate corresponds to the number of students attending school who are of the age corresponding to the level they attend, expressed as a percentage of the total population of that age group. The early school dropout rate is the proportion of 18–24-year-olds who completed up to lower secondary school as the highest level of education achieved (nine years of education) and are not attending any level of education.

Source: Center for Information for the Improvement of Learning (CIMA), 2021

Graph 1.5

High school completion rate by country, 2006 and 2018



Nota: Information is presented circa 2006 and circa 2018 according to the information available for each country.
Source: Center for Information for the Improvement of Learning (CIMA), 2021.

However, the picture is less encouraging when we compare the figures with more developed regions. The proportion **of young people graduating from secondary school is lower than the average for OECD countries** (81 percent). In fact, LAC is a region that stands out for the funnel effect of its education systems. Many students enter, but only a small proportion manage to complete the educational cycle. Only six out of ten students who enter high school complete it, and only 14 percent complete it with the minimum required knowledge and skills (Ramírez and Viteri 2020). In addition, the educational level of young people is still highly correlated to the educational level of their parents, which implies that the educational system is not effective in promoting social mobility—especially for young people who find themselves in vulnerable conditions (Familiar and Perú 2017; Neidhöfer, Serrano, and Gasparini 2017).

Higher education

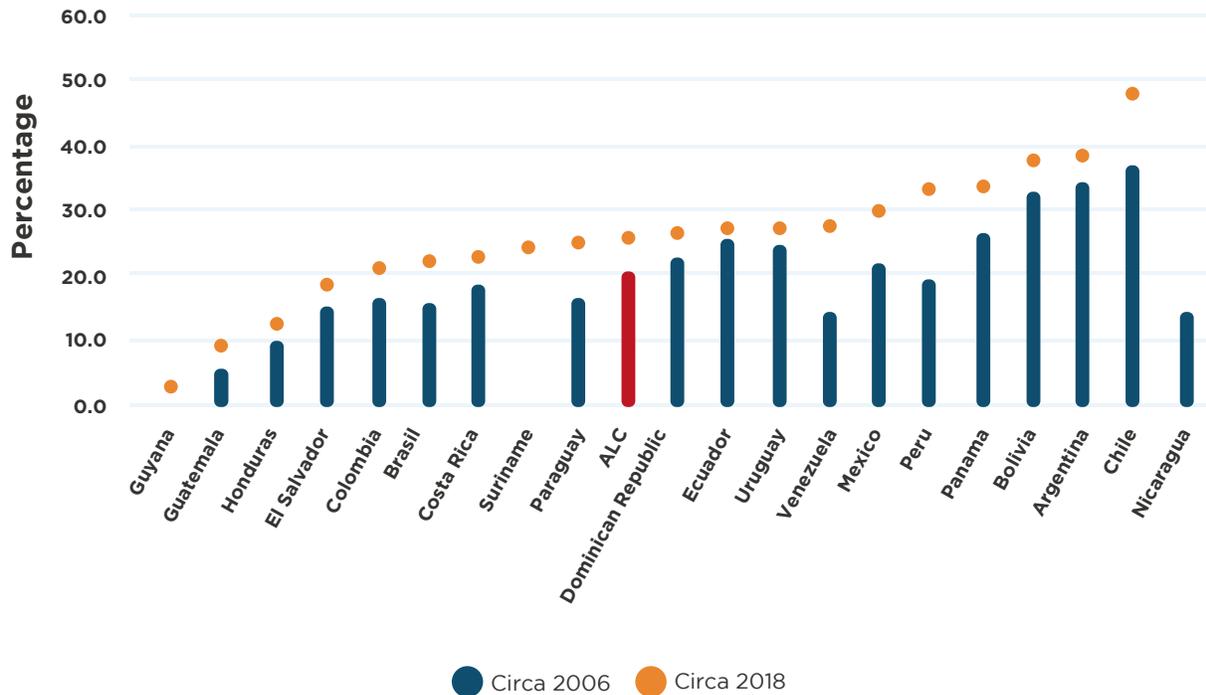
Although the educational level of young people has increased, the level of basic skills is still very low: in the 12 LAC countries that participated in PISA in 2018, on average 69 percent and 52 percent of young people failed to perform basic tasks in math and literacy, respectively (OECD 2020a). In other words, most young people who finish basic education today do so without the skills and knowledge to respond to the needs of the labor market or to continue preparing themselves with more specialized knowledge—which limits their opportunities.

Although higher education in the region has expanded considerably in the last 20 years, allowing more young people to pursue a technical or university degree, the level of attendance is still considerably lower than in developed countries. Today, about 26 percent of young people between ages 18 and 23 attend a higher education institution, compared with 19 percent in 2006. This expansion has been greater than in other regions of the world. Between 2000 and 2019, attendance in LAC doubled from 23 percent to 53 percent, second only to Southwest Asia, which progressed from 15 percent to 47 percent during the same period (See Figures I.6 and I.7). But gross higher education attendance in North America and Western Europe (78 percent) is 25 percentage points higher than the attendance rate in LAC (53 percent). LAC, in particular, shows a low participation in the higher education system among those young people who manage to complete basic education, and it has high dropout rates, preventing a high proportion of young people from completing secondary education.



Graph 1.6

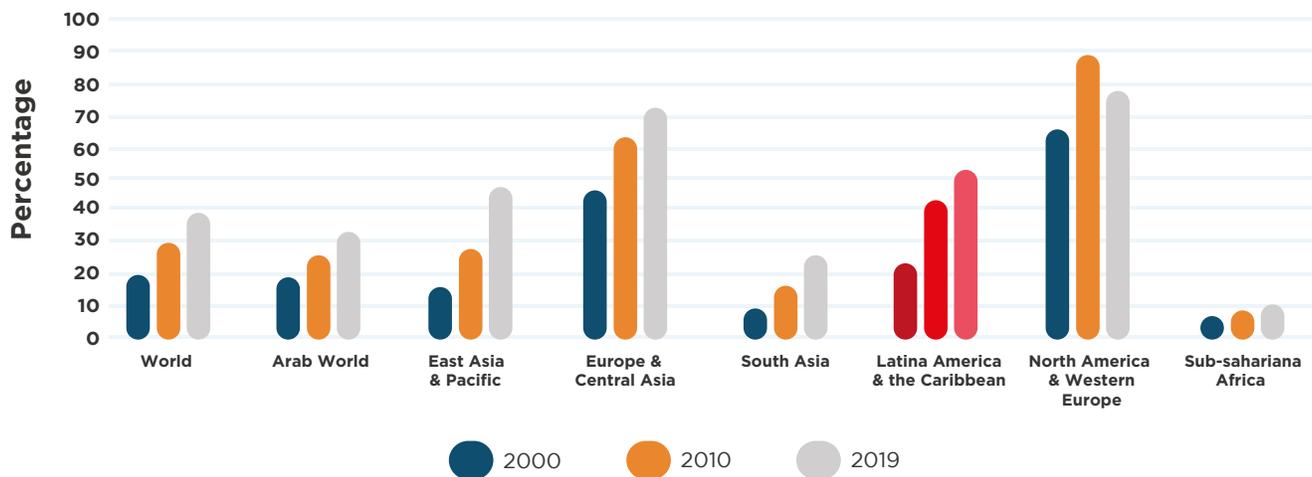
Net higher education attendance in LAC, circa 2006, circa 2018



Nota: Information is presented circa 2006 and circa 2018 according to the information available for each country.
Source: CIMA, 2021

Graph 1.7

Gross attendance in higher education and other world regions, 2000, 2010, and 2019



Nota: This figure shows the enrollment rate in higher education regardless of age, expressed as a percentage of the total population between 18 and 23 years of age, after completing upper secondary education.

Source: World Bank

Despite the sociopolitical situation of many countries in the region and the deficiencies that persist in the educational systems, young people have high expectations about their educational and employment trajectories. About 80 percent of high school graduates aspire to complete higher education, and about 80 percent of them are confident that they can do so (Rucci et al. 2018). This contrasts with higher education coverage, which currently stands at 44 percent. However, young people in the region spend most of their time preparing for their future (Rucci et al. 2018). Today, 58 percent of young people are studying, compared with 49 percent in 2006. This increase is not confined to formal education (basic and higher education): more young people are acquiring skills through informal training programs and in the workplace (OECD 2020a). According to the most recent data from the Assessment of Adult Competencies, about 49 percent of young adults in LAC between ages 25 and 34 participate in training programs, and they participate more frequently in informal and less-structured training (Rucci et al. 2018) than their OECD peers (OECD 2020a).



Not all youth succeed in advancing in their educational trajectories

Educational gaps in the region: socioeconomic level, gender and place of residence

Despite progress, not all young people in the region have managed to advance equally in the last two decades. We see divergent educational and employment trajectories and significant gaps in attendance and learning, depending on socioeconomic status, gender, and location. Especially alarming are the figures for the least advantaged youth: only 37 percent of the poorest students graduate from high school, compared with 79 percent of the relatively more advantaged students (see Figure I.8). The proportion of young people from lower socioeconomic levels who perform poorly (84 percent) is twice that of students from higher socioeconomic levels (40 percent) (see Figure I.9). In LAC, socioeconomic status is a strong predictor of skills and knowledge (Flores-Mendoza et al. 2021).

Young people from lower socioeconomic levels

High school graduates

37%

Low student performance

84%

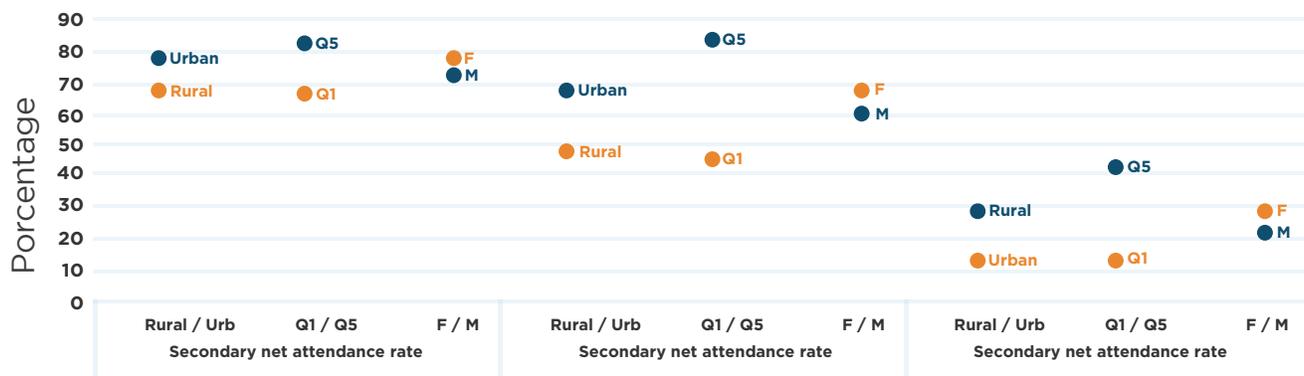
Youth from higher socioeconomic levels

79%

40%

Graph 1.8

Attendance and completion rate disaggregated by rural/urban, socioeconomic level and gender for LAC, circa 2018

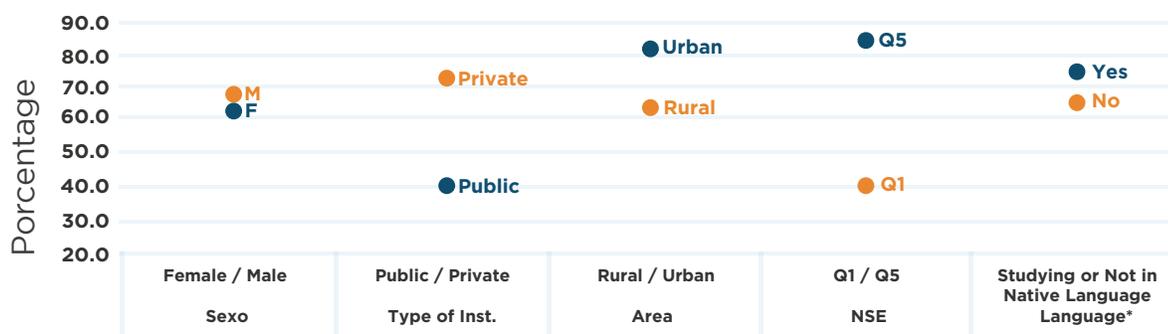


Nota: The LAC average is presented for the countries for which information is available for each year (2006 and 2018).

Source: CIMA, 2021

Graph 1.9

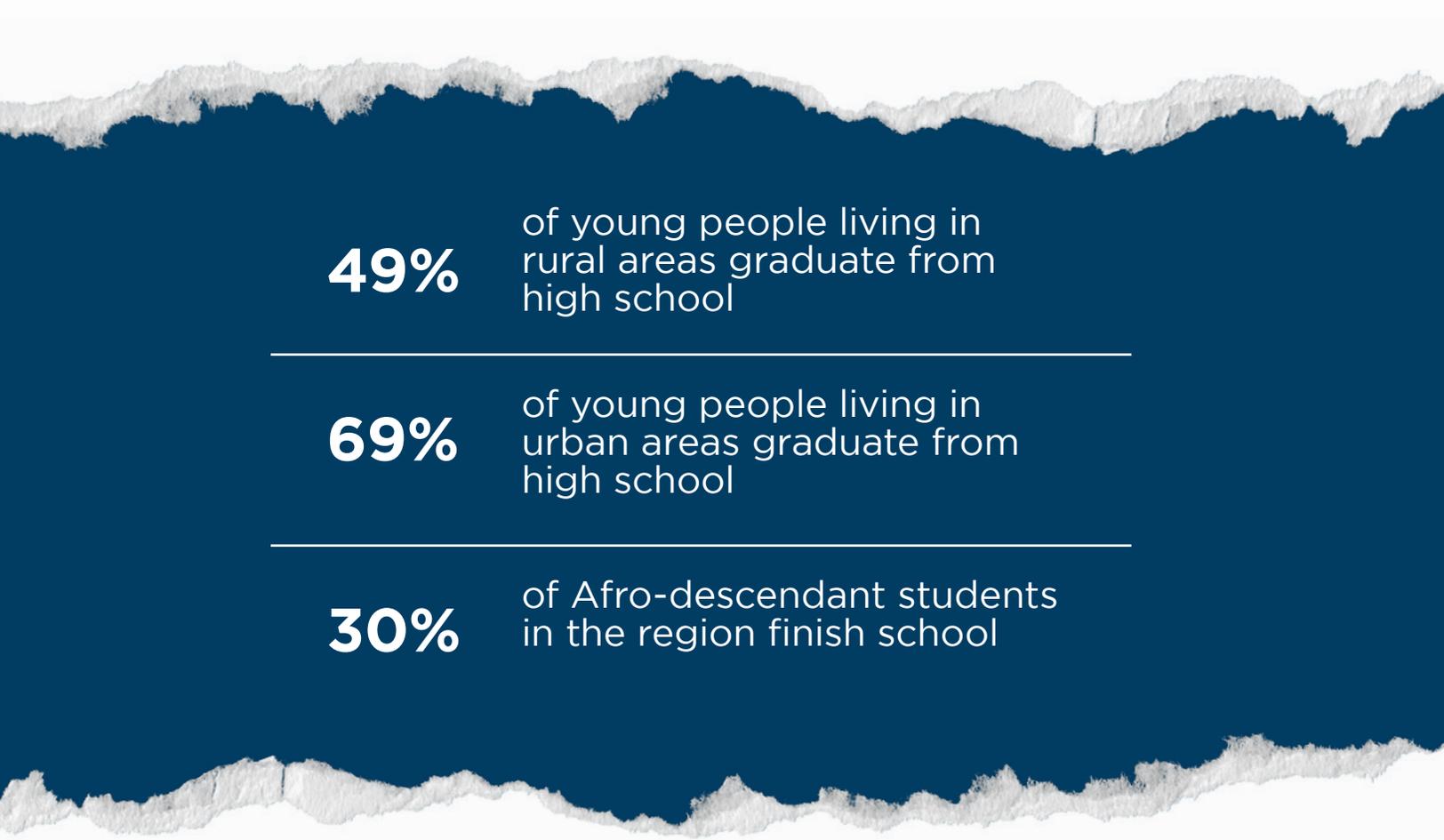
Percentage of students with low performance in mathematics in PISA 2018 disaggregated by gender, public/private, rural/urban, socioeconomic level and language of instruction, LAC average*



Nota: The LAC average for the countries that participated in PISA 2018 is presented.

Source: CIMA, 2021.

Similar gaps are observed between students from rural and urban areas, and between young people from different racial or ethnic groups. Only 49 percent of young people living in rural areas graduate from high school, compared with 69 percent of those residing in urban areas. And only 30 percent of the region's students of African descent complete school—close to half the average graduation rate for the region (World Bank Group 2019).



49% of young people living in rural areas graduate from high school

69% of young people living in urban areas graduate from high school

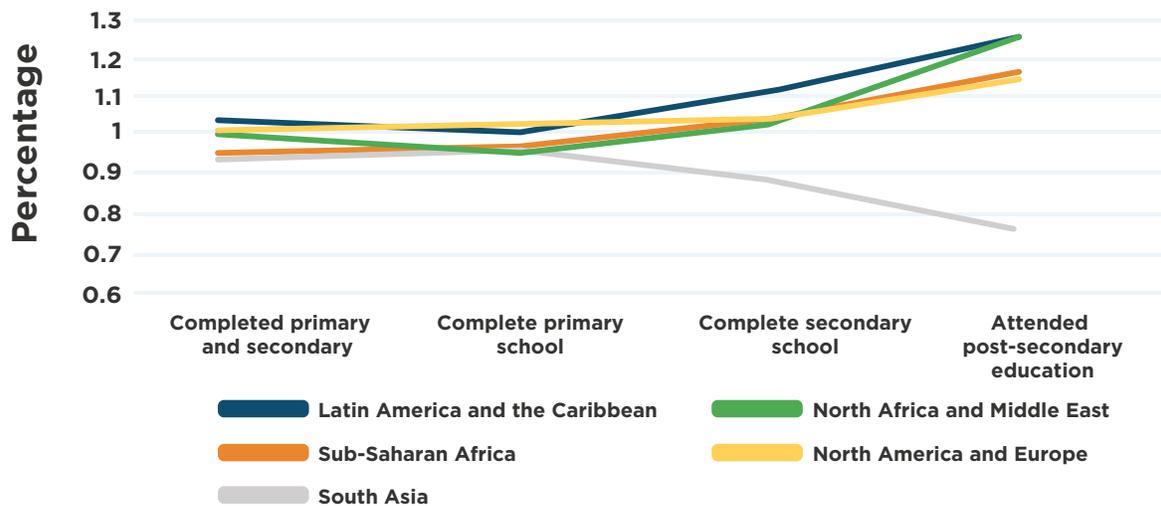
30% of Afro-descendant students in the region finish school

With respect to gender differences, men are at a disadvantage in many of the educational indicators, including the graduation rate (see Figure I.10). While 68 percent of females graduate from high school, only 60 percent of males do so. Of the total number of female graduates, about 44 percent obtain the minimum required competencies, compared with 41 percent of male graduates (OECD 2019). The gender disparities in graduation rates have remained relatively constant over the last 15 years and are significantly higher in LAC than in other regions of the world (UNESCO 2018a).



Graph 1.10

Adjusted gender parity index for selected education indicators by region, 2019



Nota: Data for Europe includes only member countries of the European Union. Data for sub-Saharan Africa are for 2018.

Source: World Bank Gender Indicators.

In addition, the enormous learning gap between migrant and nonmigrant students has been consistent. In PISA 2018, the learning gap between nonmigrant and migrant youth in reading for OECD countries was 24 points. For Colombia, this gap was almost double (46 points) (Echazarra and Shwabe 2019). In Costa Rica and Panama, the difference was 12 points. For all LAC countries that participated in the test, the percentage of high-performing students who are migrants (4 percent) was lower than that of nonmigrant students (15 percent) (OECD 2019).

These gaps are partly caused by barriers to access and integration for young migrants in the education systems of their destination countries; these may also cause them to drop out of school early. Some other factors that affect the dropout rate of this population are language differences, lack of identity documents, fear of deportation due to changes in immigration policies, limited access to financial aid, and not receiving credit for previous studies from the educational system of the receiving country. In the United States, truancy among undocumented students—many of them Hispanic—increased significantly following raids by federal immigration agents between 2017 and 2018. This contrasts with the gains in high-school graduation rates for migrants who had been registered with the Deferred Action for Childhood Arrivals (DACA) policy, which protected 1.3 million undocumented youth (mostly Latin Americans who had arrived in the United States as children) from deportation and guaranteed them the right to education and to obtaining work permits (UNESCO 2018b).

On the other hand, for young people over 25 years of age, there are divergences in educational and labor trajectories between migrants and nonmigrants. On average, the proportion of young people in the region who have completed secondary or tertiary education is higher for immigrants than for nonimmigrants (55 percent versus 43 percent). However, the educational profile differs from one country to another. For example, countries such as Costa Rica, the Dominican Republic, and Honduras have a higher proportion of immigrants without secondary education. In contrast, Chile, Mexico, Panama, Peru, and Uruguay have a higher proportion of immigrants who have completed secondary school and even a higher education degree. (Blyde et al. 2020). Although this translates somewhat into a slightly higher proportion of immigrants participating in the labor market (66 percent versus 65 percent of the nonmigrant population), this is mainly concentrated in the informal sector (65 percent versus 50 percent of the nonmigrant population) (Blyde et al. 2020). There is also a disconnect between skills and the occupations in which immigrants work: they tend to be employed in jobs for which they are overqualified. For example, in Chile and Costa Rica, migrants receive incomes below those expected for their level of education (Blyde et al. 2020). All these disjoints have repercussions on the social and economic integration of this population in the receiving countries, limiting the development of their educational and labor trajectories and, as a result, their capacity to contribute to the productive development of the receiving countries.



Box 1.2 What factors affect educational opportunities for young people?

The lack of educational opportunities is associated with the social and economic challenges mentioned at the beginning of this chapter, but also with structural and inherent problems of the region's educational systems. One of these challenges is unequal access to high-performing teachers: poorer and rural students tend to attend schools with inexperienced teachers and temporary contracts (Bertoni et al. 2018). In secondary schools, there is a shortage of teachers with specific training in the subjects they teach, and their distribution is extremely unequal. In Chile, for example, the percentage of secondary school teachers without specialized training in the subjects they teach is 19 percent in languages, 22 percent in mathematics, and 55 percent in science (Bertoni et al. 2018). In countries such as Argentina and Brazil, educational financing is quite unequal, and more vulnerable students attend schools with a lower educational expenditure than students in better-off regions (Bertoni et al. 2018).

In addition, school supplies in the region are of low quality and classroom instruction is outdated. Teaching in the region is characterized by poor academic practices (Bruns and Luque 2014; Araujo et al. 2016; Elacqua et al. 2018) In countries such as Argentina and Brazil, educational financing is quite unequal, and more vulnerable students attend schools with a lower educational expenditure than students in better-off regions (Bertoni et al. 2018).

In addition, school supplies in the region are of low quality and classroom instruction is outdated. Teaching in the region is characterized by poor academic practices (Bruns and Luque 2014; Araujo et al. 2016; Elacqua et al. 2018) and obsolete pedagogical methods characterized by repetition of exercises and memorization (Näslund-Hadley, Loera Varela, and Hepworth 2014; Bruns and Luque 2014). Despite growing access to technology in the region, wide gaps persist: in poor, disadvantaged, and remote regions, most students are still deprived of access to technology and connectivity, which prevents them from taking advantage of learning platforms and technologies. Also there are wide differences in the way teachers use and leverage technology to effectively improve learning (Arias Ortiz and Cristia 2014). Academic programs and pedagogical methods in secondary education are outdated and don't relate to the skills demanded by the labor market. Twenty-first-century skills require the implementation of context-specific secondary level education and training programs to strengthen students' critical thinking skills and increase their future participation in the labor market. Even so, the learning goals stipulated in the academic programs of many educational systems in the region continue to impose rote learning on students. The problem is particularly acute in science and technology subjects, where the list of content becomes longer as new scientific aspects emerge (Valverde and Näslund-Hadley 2011; Bando, Näslund-Hadley, and Gertler 2018). Finally, we see a disconnect between the skills taught in schools and those required to succeed in the job market (Sevilla 2017; Amaral et al. 2019).

Gaps in high school graduation rates may also influence gaps in higher education attendance. For example, a lower proportion of young people of low socioeconomic status attend higher education institutions (13 percent) than their peers of high socioeconomic status (41 percent)—even though the expansion of higher education in the last 20 years has mainly favored young people from lower and middle socioeconomic levels (Arias Ortiz, Bornacelly, and Elacqua 2021), who also tend to attend more technical and vocational programs (Ferreyra, Dinarte Díaz, Urzúa, and Bassi 2021).



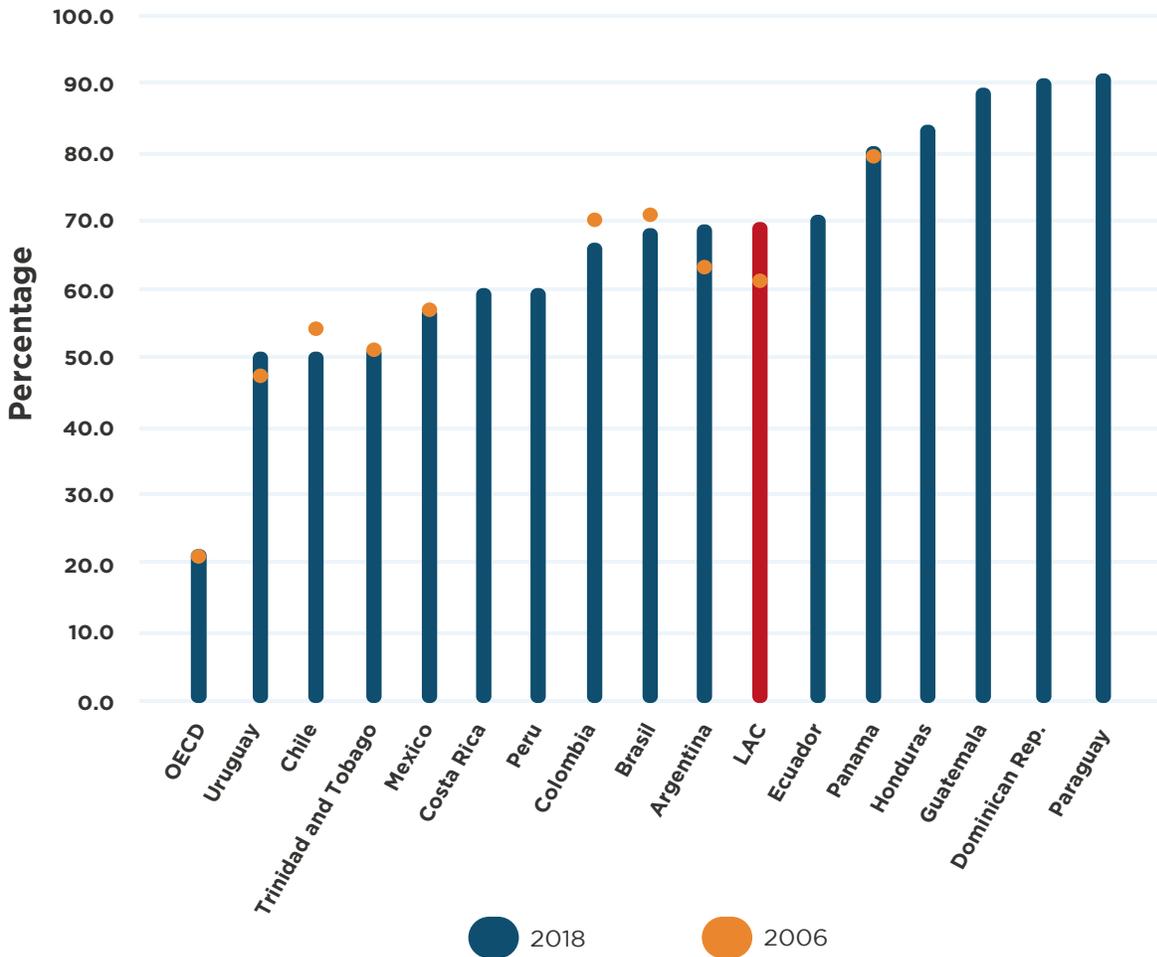
The skills gap

There is also a high level of heterogeneity in the level of basic skills of young people in the region. Countries such as Uruguay, Chile, and Trinidad and Tobago have the lowest rates of poor performance in mathematics (around 50 percent); in Paraguay and the Dominican Republic, nine out of ten students perform poorly on the same tests. This means that the skill levels of young people are significantly lower than those of developed economies and even of comparable economies. Figure I.11 shows that the proportion of low-performing youth in mathematics is three times that of low-performing youth in the OECD (23 percent). These results are similar in the language and science tests.



Graph 1.11

Percentage of students in LAC with low performance in mathematics, 2006 and 2018



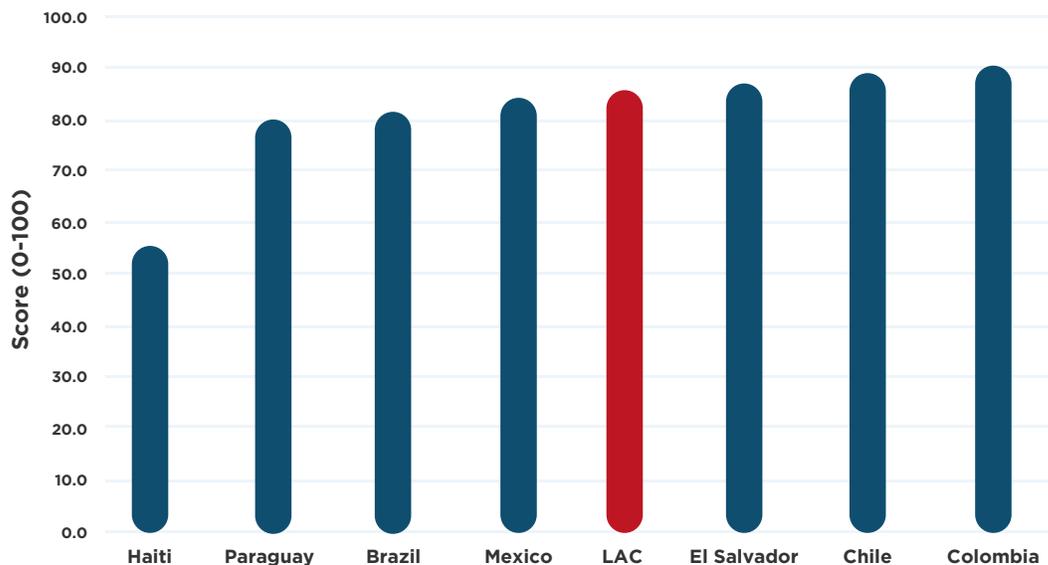
Nota: For LAC, this shows the average for the countries that participated in PISA 2018.

Source: CIMA, 2021.

On the other hand, young people in the region have a good level of digital skills. On average they record a level of 80 (out of 100) in digital technology skills—that is, they can handle devices such as computers, tablets, and cell phones (Rucci et al. 2018) (see Figure I.12). These digital skills, coupled with greater access to information, may encourage young people to take a more active role in their environment and to act on social issues (Salzman 2015 and 2018).

Graph 1.12

Skills in the use of digital technologies in LAC countries, 2017



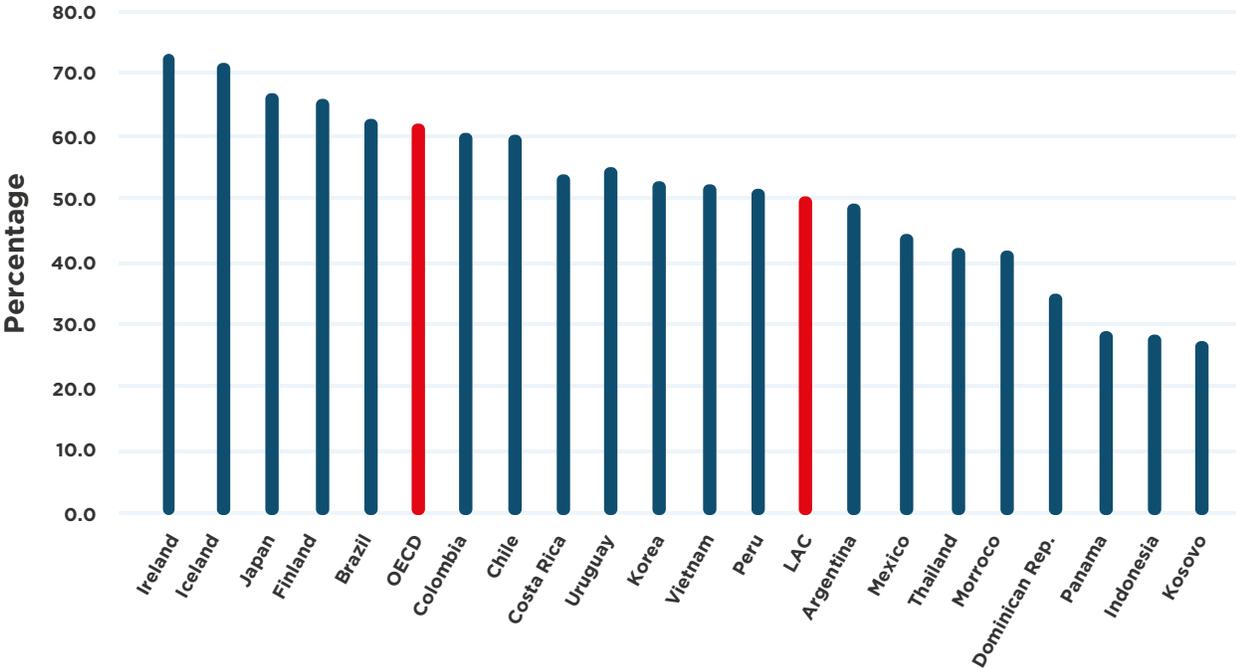
Source: *Millennials Survey* (Rucci et al. 2018).

However, **persistent gaps in access to computer tools and differences in connectivity levels jeopardize the strengthening of these skills, widen existing educational gaps, and increase the information and opportunity gap.** About 18 percent of poor youth in the region do not have an internet connection at home or at school, and 24 percent lack access to a computer, laptop, or tablet at home or at school (OECD 2020b). Likewise, four out of ten rural Latin American youth have connectivity options compared to 71 percent of urban youth (Drees-Gross and Zhang 2021). Digital skills and access to information and communication technologies are especially relevant today because they're directly associated with increases in productivity levels and development of other skills. For some young people, especially those who find themselves in vulnerable conditions, having limited access to information and communication technologies can hinder social and financial inclusion, thus restricting social mobility. Students from lower socioeconomic levels are more likely to be uninformed and to have fewer options for overcoming information barriers (Saavedra and Saavedra 2011; Castleman and Page 2015; Hastings et al. 2015).

Similarly, social-emotional skills—also known as soft skills, including perseverance, confidence in one’s own abilities, self-esteem, and self-control—are fundamental to achieving successful educational and employment trajectories and to preventing involvement in criminal activities (Wikström 2019) in unfavorable social and educational contexts such as those faced by many young people in the region. Recent evidence suggests that the level of social skills of the region’s youth is low. About 40 percent of 15-year-olds in LAC cannot solve simple problems collaboratively, compared with 20 percent in OECD countries (OECD 2016). Similarly, young people perceive that their peers at school do not engage in cooperative behaviors. In addition, half of the young people evaluated do not have a growth mindset—that is, don’t believe they can acquire skills (see Figure I.13); instead, they believe their intelligence is something that they cannot do much to change. But having a growth mindset is key to the development of skills throughout school and life (Duckworth, Peterson, Matthews, and Kelly 2007).

Graph 1.13

Percentage of students with a growth mindset



Nota: Percentage of students who disagree or strongly disagree with the statement: “Your intelligence is something about you.” The majority of students in LAC countries (51 percent) agreed with the fixed mindset statement: “Your intelligence is something about you that you cannot do much to change.” Countries and economies are ranked in descending order according to the percentage of students who disagree or strongly disagree with the statement.

Source: OECD, PISA 2018 Database, Figure III.14.1.



Given this scenario and the current socioeconomic context, the next chapter will discuss how **the COVID-19 pandemic has affected educational opportunities for young people**. Although young people in the region have been able to remain connected to education systems, for some countries the pandemic represented significant changes in school attendance and dropout rates. This has resulted in learning losses that will have consequences on the educational and employment trajectories of young people in LAC, further affecting the social and economic situation they were already facing before the pandemic—and affecting to a greater extent those who are in vulnerable conditions.



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Chapter 2

What We Have Lost during the Pandemic

Authors

 Gonzalo Almeyda

 Ela Díaz

 Gregory Elacqua

 Raquel Fernández Coto

 Jenny Carolina Hernández Cardozo

 Ximena Dueñas Herrera

 Juan Francisco Margitic

 Agustina Thailinger

 Pablo Zoido Lobatón

When in March 2020 the coronavirus pandemic forced widespread school closures, school systems and policymakers expected the emergence of large learning lags and an increase in the proportion of young people excluded from the education system and the labor market. Given the severity of such potential repercussions, scholars embarked on multiple studies in 2020 to forecast the magnitude of the problem and devise policies in advance, in order to mitigate and cushion the educational costs of the health crisis. **Two years after the onset of the pandemic, data are now available to supplement those prospective analyses and to begin to weigh the real costs of the pandemic in terms of attendance, engagement, and learning.**

In this chapter we present and analyze data from three types of official sources through 2021: household surveys, data from ministries of education, and standardized test results. This allows us to get a more realistic picture of the impacts of school closures on education. The analysis includes 11 countries in Latin America and the Caribbean (LAC) region, whose student population accounts for 83 percent of students aged 6 to 23. In turn, we present findings from various studies at the national level that have attempted to measure—with certain limitations—the impact of the pandemic on student learning. The emerging evidence reveals disturbing trends and real costs of significant magnitude.



Our analysis produces six key findings: 1) **as the pandemic progressed, millions of students became disengaged** from their educational institutions, the hours that students and teachers dedicate to schoolwork dropped profoundly, and the **quality of student-teacher interactions deteriorated**; 2) the only **study that employs a causal analysis** found large learning losses; (3) inequalities in access to quality learning opportunities have increased markedly; (4) despite government efforts to contain the decline in official school enrollment, we see an interruption in school coverage growth and reduction of gender gaps trends; (5) students, caregivers, and teachers show symptoms of emotional distress and their motivation for distance education is often poor; and (6) the pandemic-induced economic crisis has led to significant increases in the risk of dropout and a



significant increase in the proportion of young people excluded from the education system and the labor market, particularly among women and the most vulnerable sectors (poor and young people living in rural areas), which is further evidenced by declining numbers of test takers in the 2020 standardized exams.

Data for this type of analysis continue to be scarce. Countries such as Chile, Brazil, Peru, and Mexico, which have traditionally provided information on educational outcomes through the administration of national standardized tests, suspended testing during the pandemic. That simple fact has hindered our efforts to assess the effects of the pandemic in many countries of the region. Fortunately, some countries such as Colombia, Jamaica, Barbados, and several states in Brazil, were able to administer standardized tests, which has served as the basis for the analysis in this document.

An Inter-American Development Bank-sponsored study in São Paulo, Brazil, identified an average 72.5 percent learning loss compared to the learning that would have occurred if classes had continued without interruption. Such losses, estimated individually from the 6th to the 12th grade, reflect values ranging from 60 percent to 100 percent of learning, meaning that, in some cases, the entire school year was lost. In the rest of the countries where standardized evaluations have been carried out, we observe a notable decrease in the number of students evaluated in relation to the historical trend. Those losses are concentrated not only among students with lower academic performance, but also among those with better academic results. In this regard, while Barbados is an example of the former, in Colombia and Jamaica both phenomena are evident. Learning losses among lower-achieving students may be due to the economic impact of the pandemic, while losses among higher-achieving students may be understood as strategic student behaviors derived from changes in the university admissions process.

Aspects of the analysis also highlight the difficulties in attempting to estimate the effects of the pandemic on learning. On the one hand, although in some countries standardized tests have been applied at the national level, they had to be adapted to biosafety protocols, shortening their duration and limiting the content covered. This calls into question the validity of comparisons between years. On the other hand, some countries, such as Colombia, have students fill out socioeconomic questionnaires at the time of taking the exam and do not use administrative sources. This implies that such information (self-reported characteristics by students) may have been affected by the pandemic and, if used to compare students, may result in invalid comparisons.



Latin America and the Caribbean: Longest School Closures in the World

Some pertinent facts:

- Of all the world's countries, Latin American countries have endured the longest duration of pandemic-related widespread school closures.
- Whereas school systems in Europe, North America, and Oceania underwent complete school closures of less than three months, those in Latin America had closures of close to eight months.
- As of December 2021, most countries in the LAC region maintained partial closures at the national level, keeping a proportion of educational institutions open a few days a week.
- Uruguay is the only country in the region that reports a closure pattern akin to that of high-income countries.

Countries in the Latin American and Caribbean (LAC) region are facing not only a health emergency, but also an educational one. COVID-19 has taxed education systems all over the world, but the challenge has been even greater in LAC, since most countries in the region have neither the infrastructure nor the resources to adapt quickly to a new distance education model. For example, on average 23 percent of households in the region lack access to any type of internet and 36 percent of households have no access to computers (Rieble-Aubourg and Viteri 2020). Connectivity and access to digital equipment are distributed very unequally across the region. For example, in vulnerable contexts and rural areas of Peru, Mexico, Panama, and Colombia, more than 60 percent of households do not have an internet connection or at least one computer at home (Arias and Viteri, 2019; Rieble-Aubourg and Viteri, 2020).

23% of households in the region do not have access to any type of internet

36% of households in the region do not have access to computers

Initial measures to prevent the spread of the coronavirus left about 166 million children, youth, and adolescents in LAC unable to attend face-to-face classes for an average of 158 days between March 2020 and February 2021. That is the longest such school closure in the world (UNICEF 2021). More than 70 percent of LAC countries reported school closures of more than nine months, a figure that is double the average recorded in high-income countries globally, which show closures of less than three months. Uruguay is the only country in the region with a closure pattern similar to that of high-income countries. The reopening has been gradual and partial in practically all LAC countries. This means that, in some cases, children attend classes only some days a week and, in others, schools practice a scheme of alternation where students attend every other week or some schools are open and others are not.

166 million

of boys, girls, young people and adolescents did not attend face-to-face classes during

World's longest school closure

Schools closed for
158 days
between March 2020 and February 2021

More than 70%

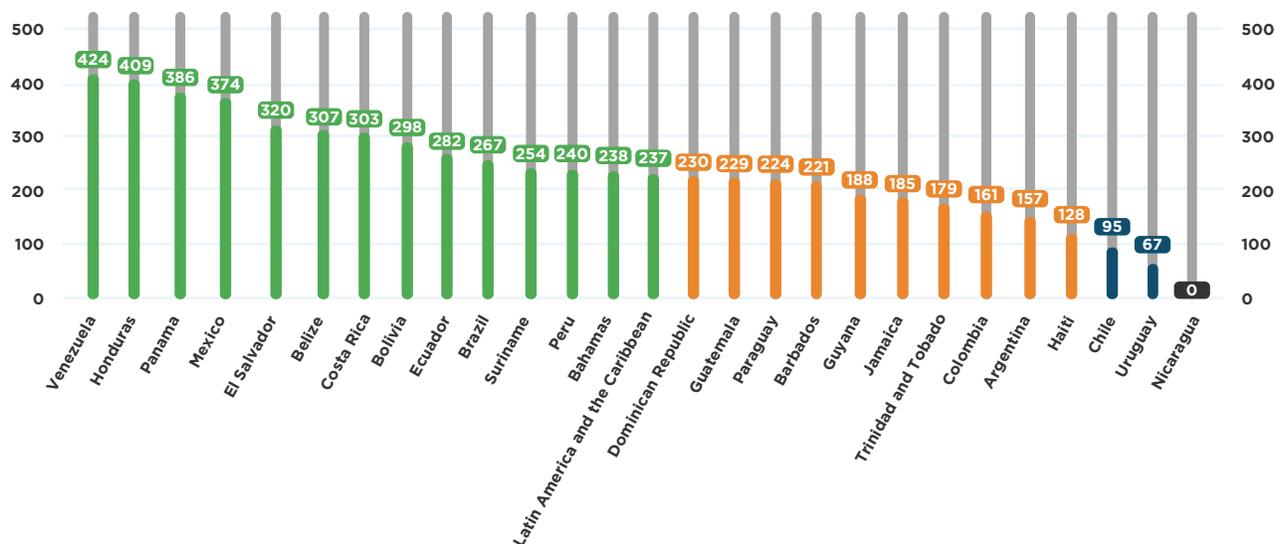
of countries in the region reported school closures

More than a year into the pandemic, by the second quarter of 2021, school closure still affected 60 million students. Six LAC countries maintained a general school closure and 17 had systems of partial closure in place, keeping a proportion of educational centers open a few days a week nationally (Almeyda et al., 2021). As of December 31st 2021, the average number of days schools in the 26 LAC countries had been closed was 237.¹

1. As of December 31, 2021.

Graph 2.1

Total number of days without face-to-face classes (March 11th, 2020–December 31st, 2021)



Nota: The total number of days without face-to-face classes refers to the total number of school closures in the period between March 11th, 2020, and December 31st, 2021. The number of days specified does not include days of partial closure, vacations, or weekends. Latin America and the Caribbean was limited to the 26 countries of IDB Latin America.

Source: Calculation of days without face-to-face classes from UNESCO countries' daily status database (2021). Data obtained from <https://covid19.uis.unesco.org/global-monitoring-school-closures-covid19>.

Against the backdrop of such extremely adverse conditions, governments have implemented various strategies to deliver information and educational materials to students. School systems have used not only virtual classes, both synchronous and asynchronous, but also teaching via television and radio and the sending of printed material (Almeyda et al., 2021). **The priority has been (1) to preserve the school-teacher-student connection,** despite any inequalities that may accompany that link, and (2) to monitor the process, taking into account the new reality: duration of confinement in the school calendar, how many students are still in school, how many are connected, through which media they are pursuing learning, and which students are disconnected, including among those priorities the socio-emotional monitoring of students, teachers, and families (Rivas, 2020).

With regard to effective access to digital technologies, it has been noted that mere access to equipment and the internet is not enough, incentives and mechanisms must be generated to guarantee two things: on the one hand, that student continue in contact with teachers and develop the capacity to learn autonomously, and, on the other hand, that teachers learn to use and take full advantage of technology using new pedagogies. The latter is more difficult in a context of inequality, also present among teachers, and where the lack of technological equipment has led to a “whatsappization” of teaching, in which sending messages and short instructions predominates and there is no emphasis on interaction (Equity for Children, 2020).



Enrolled, but at Risk of Dropping Out

Some facts relative to the pandemic and student dropout:

- Millions of students have left the education system as a result of school closures and the move to a virtual modality.
- The drop in attendance is not as large in relative terms, and it focuses on 18-to-23-year-olds, as one would expect.
- In countries with panel data that allow follow-up of the same cohort, the drop is greater.

Three Million Students Drop Out of the Education System

The forced migration to non-face-to-face education through the various strategies countries have implemented, coupled with the economic impact on families, foreshadowed a massive exit of students from the education system (Acevedo et al., 2020; World Bank, 2021). **The data show, however, that although the drops observed in attendance indicators are significant, they are smaller than expected.** Looking at the average of countries with available data on attendance variation in 2020, we can see a decrease in the school attendance rate of 1.7 percentage points on average for the 6-to-23-year-old population - that is, those of primary to higher education age.²

In absolute terms, the variation in attendance translates into an outflow of more than three million students (of the more than 145 million students in these 11 countries)³, which would be added to the already close to 30 million children and young people aged 6 to 23 who do not attend any level of education⁴. Brazil, Peru, and Mexico account for more than 70 percent of this variation (Graph 2.2).

². The calculation considers people who report to attend an educational institution regardless of the study modality (classroom, hybrid, online). The household surveys in the region did not change their question on attendance at educational institutions but chose only to include more detail on distance education per se in comments in the surveyor's manual or in additional questions. Appendix II.1 describes the questions on distance education, means of access to remote education, and interaction with teachers in the household and Ministry of Education's surveys.

³. Estimates based on employment and/or household surveys (see Appendix II.3). Although the information on the variation in the attendance rate was calculated with only 10 countries, the outflow of students leaving the system is translated to the 11 countries in the general chapter.

⁴. Estimates based on employment and/or household surveys (see Appendix II.3).



Graph 2.2

Number of students leaving the education system in absolute terms, circa 2019 and 2020



Nota: Students aged 6 to 23 years.

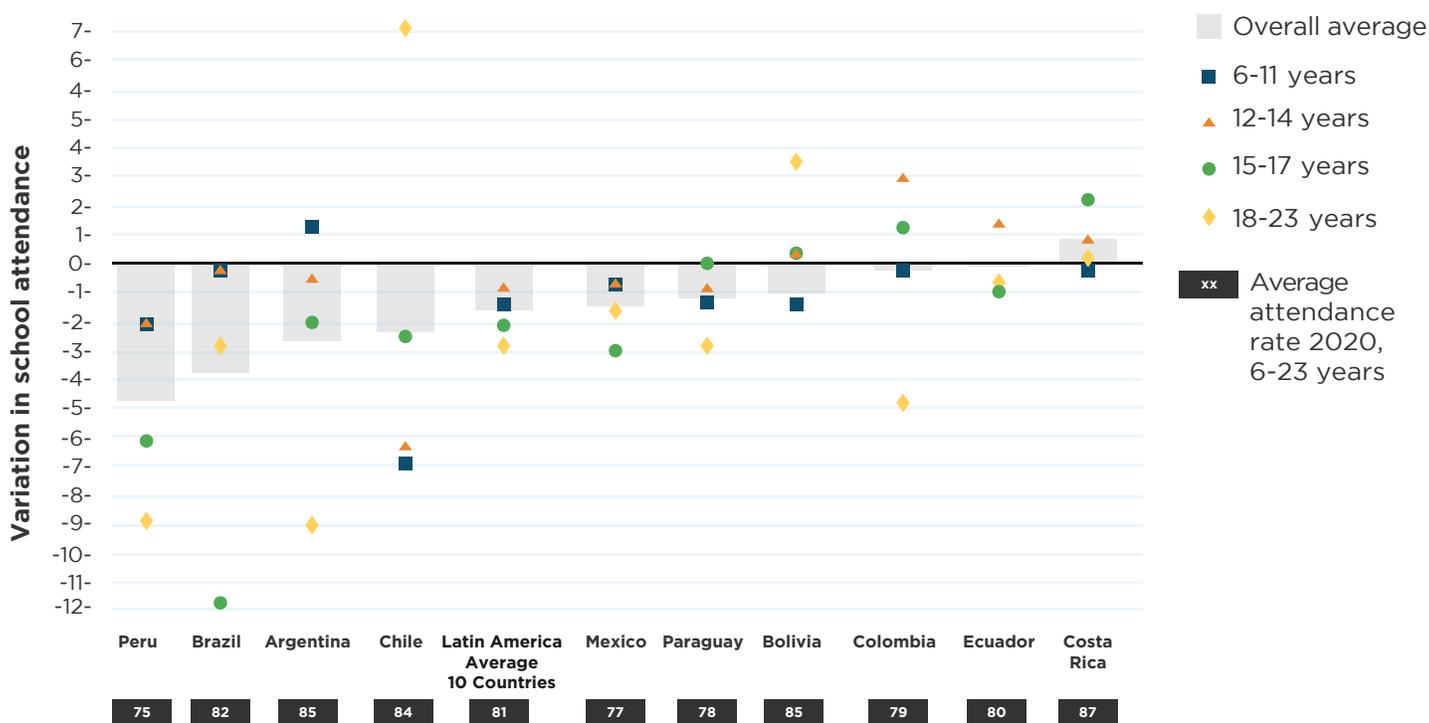
Source: Calculations based on employment and/or household surveys (see Appendix II.3).



In relative terms, Peru, Brazil, Argentina, and Chile are the cases with the largest falloffs in average attendance, between 3 and 5 percentage points, followed by Mexico and Paraguay, with drops of around 2 percentage points. (Graph 2.3).

Graph 2.3

Change in school attendance rate in LAC by age group, circa 2019 and 2020



Nota: Data from Bolivia, Brazil, Costa Rica, and Paraguay reflect differences between 2019 and 2020. The data for Ecuador correspond to the difference between the fourth quarter of 2020 and the fourth quarter of 2019. For Argentina, we consider the difference in the attendance rate between the second and fourth quarters of 2020. For Mexico, the difference in the attendance rate is calculated between 2018 and 2020. The data for Brazil correspond to differences in the attendance rate of synthetic cohorts. The information for Colombia is for August 2019 and August 2020. Data for Chile represent the changes in attendance for 2017 and 2020. The category “Latin America average” includes the average result of school attendance variation for 10 countries, excluding Uruguay.

Source: Calculations based on employment and/or household surveys (see Appendix II.3).

The declines in attendance vary by educational level. The largest drop—more than 3 points—was recorded in the 18-to-23-year-old population (higher education), followed by the 15-to-17-year-old population (secondary and middle school education) with a reduction of 2.2 points; finally, the 6-to-14-year-old population (primary and secondary education) recorded a drop of only 1 percentage point. These more pronounced impacts on older youth appear to reflect that, at this age, men are often looking for work and women are pressed to perform domestic and care work for other household members (Devignes, 2021; Subrahmanyam, 2016; USAID, 2008), thus linking household economic demands to school attendance.

According to a UNESCO survey of Ministries of Education around the world (UNESCO et al., 2021), governments in many countries tried to preserve educational continuity through measures such as prioritizing specific areas of the curriculum, extending the school calendar, and implementing automatic promotion. In LAC countries, the most common measure adopted was to prioritize areas of the curriculum and the least used was the extension of the academic year (Almeyda et al., 2021). The attendance data available so far suggest that government efforts have been successful in maintaining official enrollment. However, educational exclusion is usually the last step in a disengagement process that involves both social risk factors, such as economic disadvantage, and academic risk factors, such as falling behind in learning, absenteeism, or disengagement from school activities (Lee et al., 2003). As we will see below, **the impact of the pandemic on families' finances and on the quality of students' interactions with their schools carries a high risk of exclusion in the medium term.**

Increased Risk of Dropout Due to the Financial Crisis

Two relevant facts regarding finances and student dropout:

- General data on the impact of the pandemic in the region show a deep financial crisis.
- Head of the household employment lost is related to dropout.

Lockdown measures necessary to curb the spread of the COVID-19 virus have led to an economic slowdown in LAC, with rising rates of unemployment and informal employment, and a relatively greater impact on the poorest and most vulnerable. Macroeconomic indicators in the region show the extent of the impact: the 7 percent drop in gross domestic product in 2020 was the highest recorded since 1821; between February and October 2020 nearly 26 million jobs were lost, and extreme poverty is expected to increase between 12 and 14 percent (IDB, 2021).

GDP Drop

70%
in 2020



the highest
recorded
since 1821

Increase in extreme poverty

is expected
to increase
between

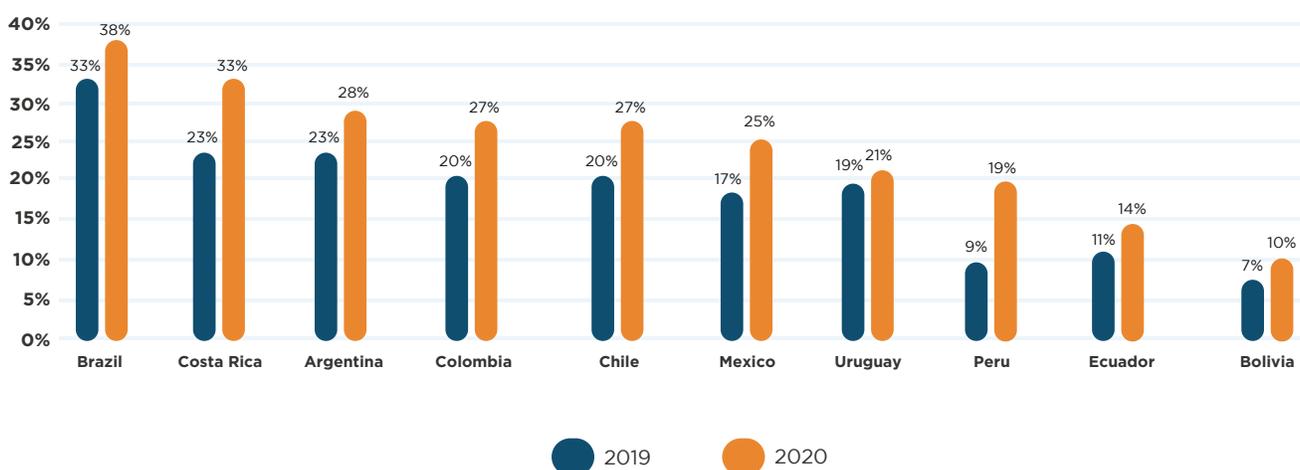


12%
and
14%

The serious human and economic consequences and repercussions of the pandemic are being felt in the short term and will be felt in the long term. In this regard, we need to measure those effects not only in terms of variations in indicators in the present but also in future scenarios the crisis will bring, and that includes its unequal impact among populations (Seusan and Maradiegue, 2020). The Economic Commission for Latin America and the Caribbean projects a limited economic recovery by 2022 and highlights the still difficult situation of Latin American households, where the loss of income may be exacerbated if emergency transfers some governments have implemented are discontinued, increasing the risk of school dropout in the region (ECLAC, 2021).

Graph 2.4

Percentage of high school students living in a household where the head of household is not employed, circa 2019 and 2020



Nota: High school students with an unemployed head of household. For Argentina, Bolivia, Brazil, Costa Rica, Ecuador, and Peru, percentages reflect students aged 12 to 17 years old; for Colombia, students aged 11 to 16 years old; for Chile, students aged 14 to 17 years old; and for Mexico, students aged 15 to 17 years old. Data for Ecuador refer to the third quarter of 2019 and 2020. Data for Colombia are for August 2019 and 2020. For Chile, 2017 data are taken as a proxy for 2019 data.

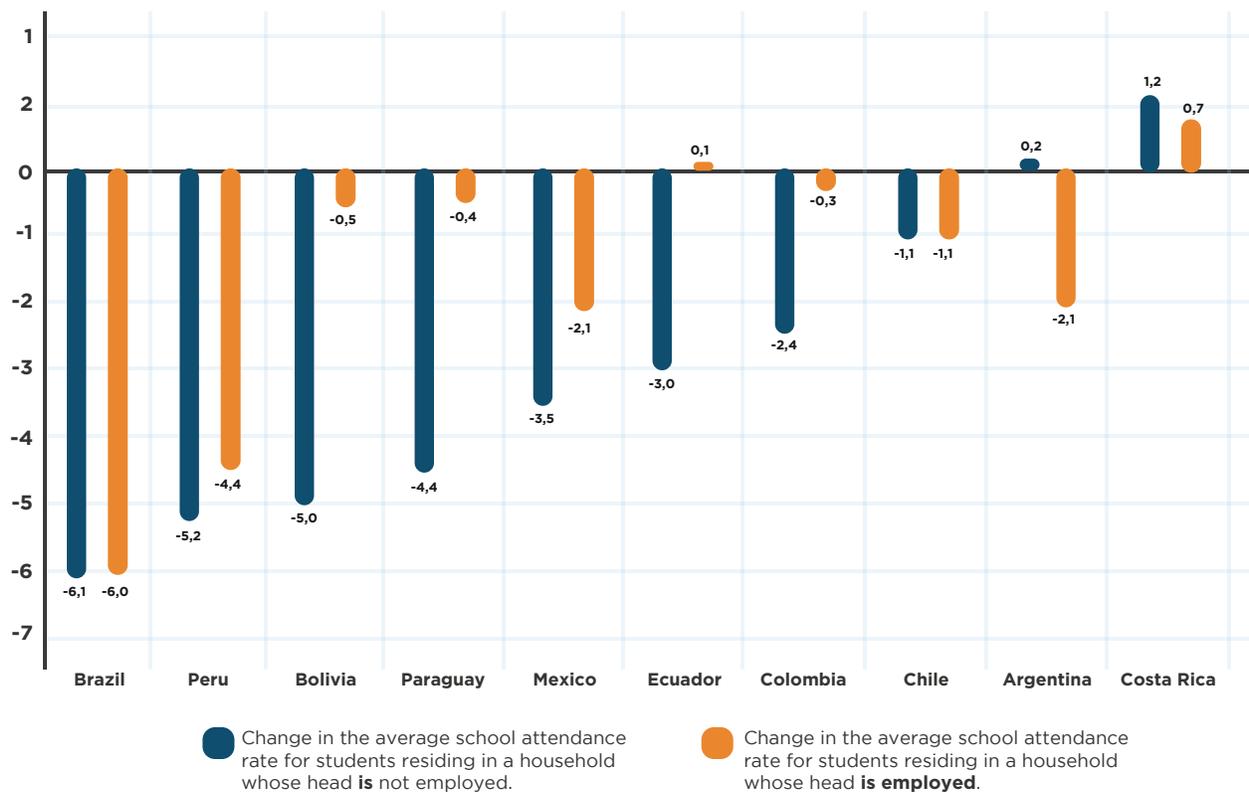
Source: Calculations based on employment and/or household surveys (Appendix II.3).

The pandemic has affected students' whole environment, including bringing economic pressure inside the household. As Acevedo et al. (2020) show, **the probability of school attendance is significantly reduced when the head of the household does not generate any income.** Lack of work has a direct impact on the household's ability to finance various needs, including education. In addition, the household head's loss of employment can lead students to leave the education system in search of employment to compensate for the negative effect on the family's finances. In that regard, data from household surveys in the region show a significant increase in the risk of student dropout. The percentages of secondary school youth living in households whose head was not employed increased in all countries during 2020, reaching 30 points higher in Brazil and Costa Rica, and more than 20 points higher in Argentina, Colombia, Chile, Mexico, and Uruguay. In Peru, Ecuador, and Bolivia, the increases were smaller but still significant. In Peru, Bolivia, Paraguay, Mexico, Ecuador, and Colombia, school attendance fell much more in the case of young people residing in households whose head was unemployed versus those living in households with an employed head (Graph 2.5).

In households where the head is unemployed, high school youth is not only on a greater risk of dropping out of school but also a greater risk of disengagement with school, reflected in fewer hours dedicated to school activities during the pandemic.

Graph 2.5

Change in average school attendance among youth living in households where the head of household is unemployed, circa 2019 and 2020



Source: Calculations based on employment and/or household surveys (Appendix II.3).

Unequal Deterioration of the School-Family and Teacher-Student Bond

Analysis reveals that during the pandemic:

- The number of educational interactions was limited;
- The number of hours students dedicated to study diminished;
- Much inequality exists in access to teachers or participation in educational activities;
- The decline hours spent studying was more pronounced for more vulnerable groups: students in rural areas, poor students, and students whose head of household was unemployed.



General Disengagement from the Educational Process

Students were disengaged from the education process during much of the pandemic. In countries such as Brazil, Mexico, Argentina, and Peru, between 32 and 50 percent of students aged 6 to 23 years old either did not participate in learning activities or had no interaction with teachers during the pandemic. Given that these are among the richest countries in the region, we can expect the numbers to be even worse in countries with lower average income levels for which detailed data are not available. These statistics collect students' self-reported study hours and include both in-class hours and individual study hours. It is likely that the reduction in study hours is due both to fewer study hours in distance learning classes and fewer individual study hours.

Disengaged students

Between
32%
and the
50%

Students aged **6 to 23 did not participate** in learning activities in countries such as **Brazil, Mexico, Argentina y Peru**

In Mexico, an atypically high number of around 50 percent of students reported dedicating zero hours to school activities in 2020, despite remaining enrolled in the education system. That is an increase of 30 points compared with the average observed between 2015 and 2019. In contrast, the percentage of students who reported spending more than 20 hours per week studying decreased by 47 percent.



Increased Disengagement in Vulnerable Households

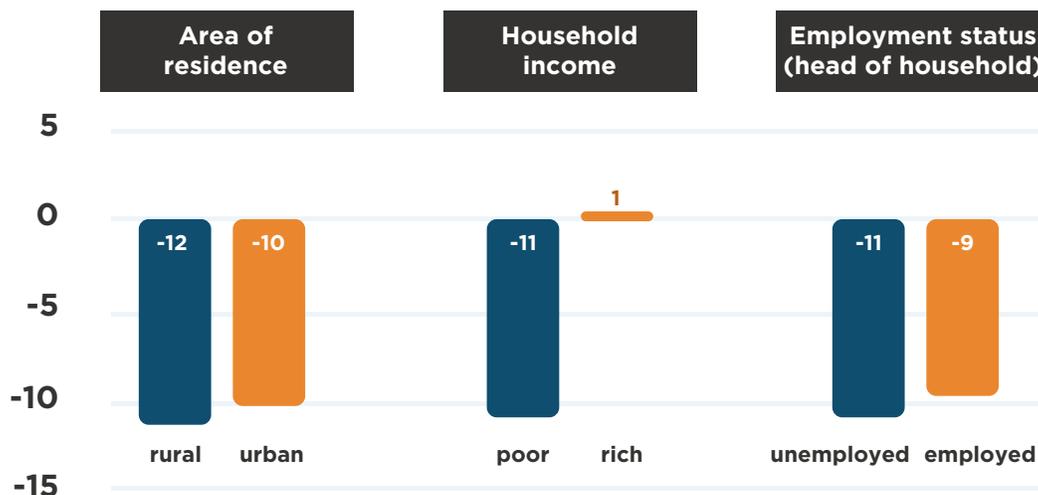
The decline in hours spent studying was greater for more vulnerable groups: students in rural areas, poor students, and students whose head of household was unemployed. As Figure II.6 shows, rural households showed a slightly larger reduction in study hours than urban households. The drop was also higher among students whose head of household was not employed; and the drop was considerably more pronounced among students residing in households located in the poorest quintile of the income distribution, compared with those residing in households in the 20 percent of the population with the highest incomes. **This suggests that learning gaps between groups from different income level may have increased significantly.**

"The losses in study hours were greater for the most vulnerable groups: students in rural areas, poor and whose head of household was unemployed."



Graph 2.6

Percentage change in number of hours per week that students aged 15 to 17 devote to study in Mexico, average variation, 2015–2019 and 2020



Nota: Quarterly tabulations of the number of hours dedicated to the study for those who reported a zero or positive value (missing figures are discarded).

Source: Authors' own calculations based on Mexico's National Survey of Occupation and Employment (ENOE).

Dedicating fewer hours to study is associated with poorer academic performance and a higher probability of dropping out of school.

A probabilistic model shows a positive association between hours spent studying in previous quarters and the probability of remaining enrolled in the education system in the next grade.⁵ The relationship between these variables has been studied through Mexico's National Survey of Occupation and Employment (ENOE) panel data for the years 2017 and 2018. In this regard, it was found that each additional hour that students dedicated to school activities was correlated with the probability of continuing studying. When students dedicated more than 31 hours per week to learning, the probability of enrolling in school the following year increased by 3 percent compared with those who dedicated less than 31 hours. Given the lower number of hours per week spent studying during the pandemic, it was estimated that the probability of dropout for students aged 12 to 17 increased from 8.46 percent, prior to 2020, to 9.58 percent in 2020, a 13 percent increase in the probability of dropout.

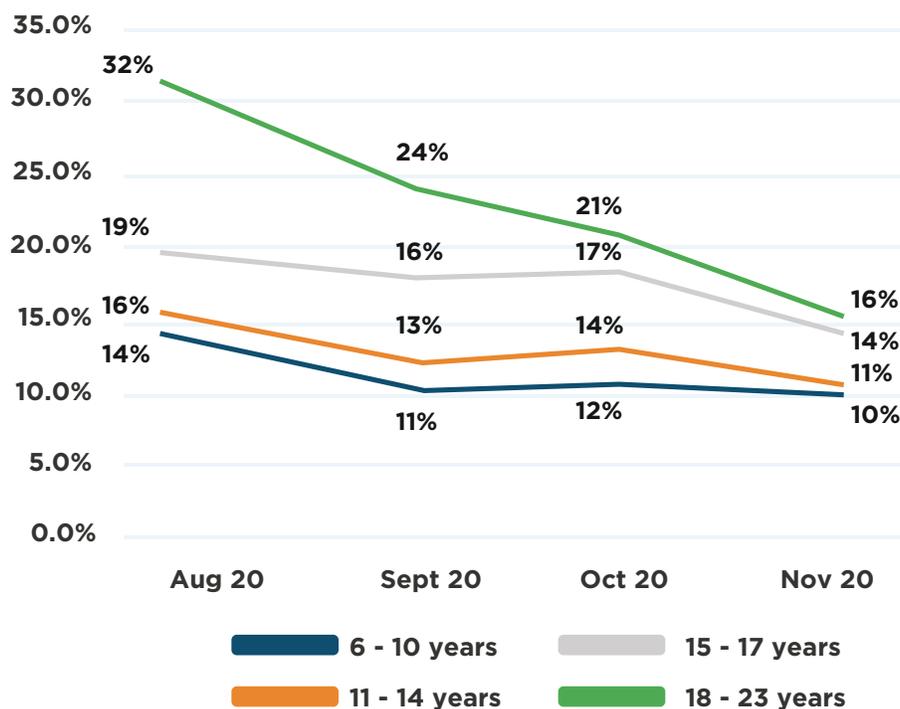
Falloffs in the number of hours spent studying were also observed in Argentina and Brazil. In the case of Argentina, it was found that the percentage of students in public schools between 6 and 10 years old who dedicated three hours or less to study increased from 48 to 52 percent between June and November 2020, and the percentage who dedicated four or more hours decreased from 54 to 46 percent.

5. Further details of the probabilistic model can be found in Acevedo et al. (2022).

In Brazil, differences by age were observed in the percentage of students who reported spending two hours or less per day on school activities between July and November 2020. The rates range from 47 percent for the 6-to-10 age group to 29 percent for the 18-to-23 age group. In all age groups, a higher percentage of students spent two hours or less studying per day in rural areas compared with urban areas. When asked whether they had school activities at home during the week, students showed the greatest disengagement with learning in the initial months of the pandemic. That question began to be asked in July 2020 and was answered by the same group of students for seven months given that the survey was a panel survey. Responses revealed that, in August 2020, 32 percent of 18-to-23-year-old students and between 14 and 19 percent of 6-to-17-year-old students reported having no school activities at home. This indicates that the intensity of school activity improved after an initial period of adjustment, but without reaching the levels recorded before the pandemic (Graph 2.7).

Graph 2.7

Percentage of “disengaged” students attending school in Brazil, 2020



Source: Authors’ own calculations based on the PNAD (Pesquisa Nacional por Amostra de Domicílios) survey, 2020. COVID-19 monthly modules.



The Pandemic, a Trap for Young Women

- Young women experienced a decline in study time similar to men but with an increase in caregiving and household chores.
- Data show a higher prevalence of women in the indicator of young people who are neither studying nor gainfully employed and a slower recovery for women in that indicator in 2021.

The case of young women is particularly concerning as several factors combine to push them out the educational system and pressure them to increase their involvement in domestic chores. In Mexico, for example, the number of hours that 15-to-17-year-old girls spent on domestic activities such as cleaning, cooking, or caring for younger children or the elderly increased by 18 percent during lockdown, compared with a 2 percent increase for young males⁶ (Acevedo et al., 2021).

Although great progress has been made in the LAC region in the females' school attendance rate, which surpasses even male's rate at adult ages, statistics show that gender roles still latent in the region have a differential impact on the transition to adulthood of men and women. Men enter the labor market earlier, and women remain economically inactive to a greater extent because they are engaged in domestic and care work. Even as students, women devote more time to cleaning, cooking, childcare, and elder care activities in their homes. This disproportionate burden limits the time they devote to school activities at home during childhood and adolescence, and for about 22 percent of women aged 15 to 24, it becomes their only activity.⁷

If nothing is done to remedy such inequalities and recover lost human capital, the region will suffer serious consequences. Even before the onset of the pandemic, the high percentage of young people in the region who were not in education, employment, or training (NEET) was concerning, due to the social and economic consequences it entails. Acevedo et al. (2020) estimated that during 2020, the region would register a 21 percent increase in the number of 15-to-24-year-olds in this condition, as a consequence of the economic crisis and due to the combination of school dropouts and a shrinking labor market. Such an increase, according to the authors, could have consequences on future employment opportunities of current generations of young people, who may see their productive trajectories cut short.

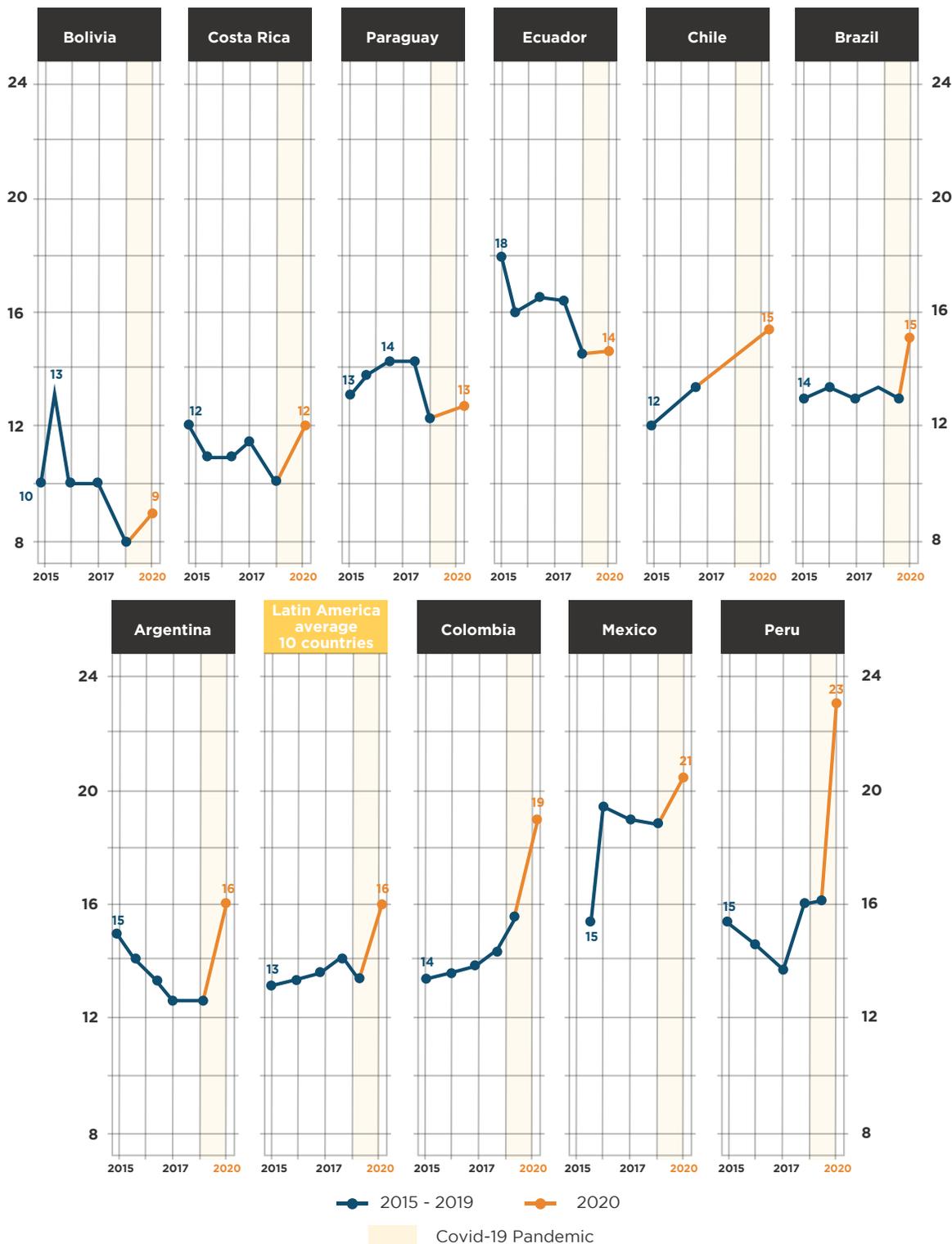
Available statistical information allows us to confirm that **the percentage of NEET youth increased by 23 percent on average**, from around 13 percent in 2019 to 16 percent in 2020 (Figure II.8). Extrapolating the result to LAC as a whole, this implies an increase of around 2 million. The largest percentage-point increases when comparing 2019 and 2020 figures are recorded in Peru (6 percent), Colombia (4 percent), Chile (3 percent), Brazil (2 percent), and Mexico (2 percent).

6. This evidence of increased time spent on domestic and care work among girls and young women during the pandemic was verified in Mexico and Colombia.

7. Calculations are based on employment and/or household surveys (Appendix II.3) and reflect the average in 11 countries in 2019 and 2020: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Paraguay, Peru, and Uruguay.

Graph 2.8

Percentage of Latin American youth 15 to 24 years old who neither study nor work, 2015-2020



Nota: The category “Latin America average” reflects the average percentage of young people who neither study nor work for 10 countries, excluding Uruguay. For Ecuador, data includes the average of quarters 3 and 4 in 2019 and 2020. For Colombia, data includes the average result for the months of February, May, August, and November in 2019 and 2020.

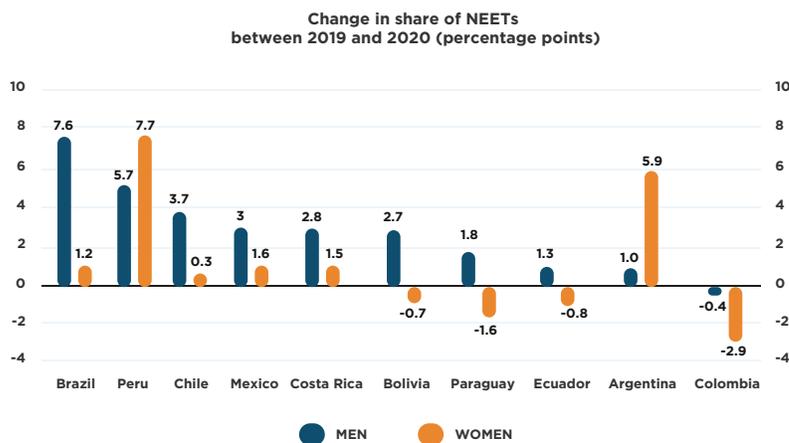
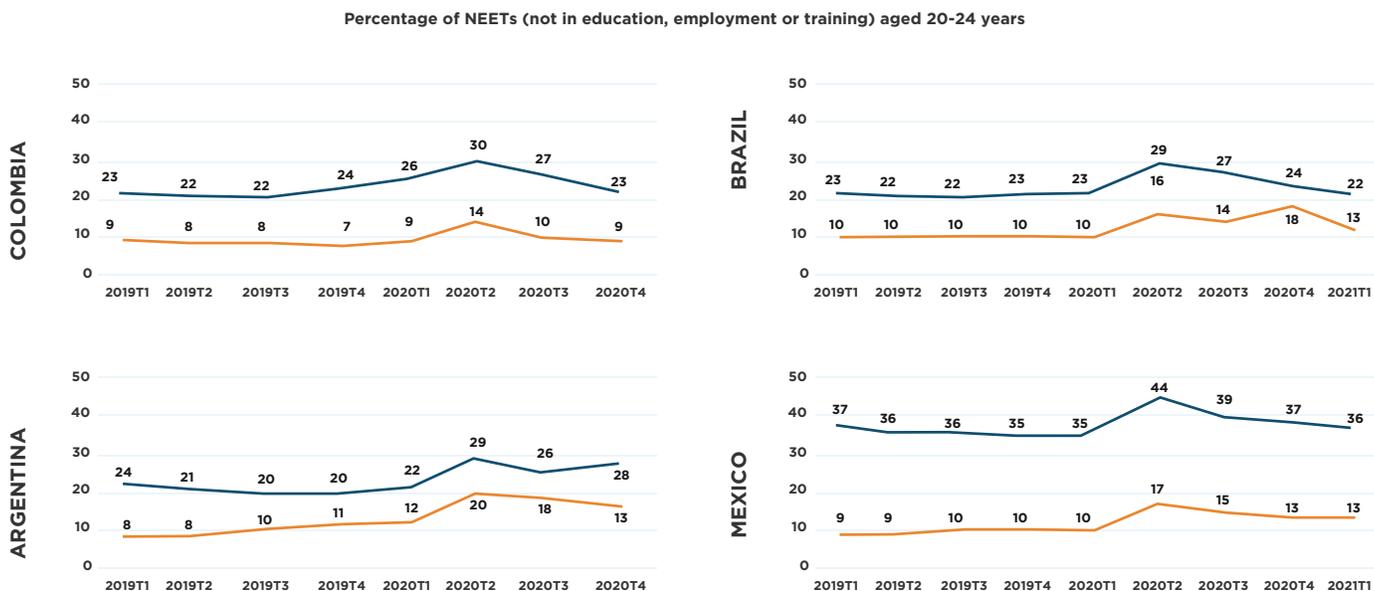
Source: Authors’ own calculations based on household surveys (Appendix II.3).

A generalized phenomenon in Latin America is that **the percentage of females in the NEET category tends to be higher than that of men**, even though women attend school at higher rates. When analyzing the dynamics between 2019 and 2020 we find that significant gender differences lurk behind the averages, with higher increases in NEET men, but a greater magnitude of the indicator and its permanence in women. As can be seen in Figure II.9 (right panel), in Brazil, Chile, Mexico, Costa Rica, Bolivia, Paraguay, Ecuador, and Colombia (Peru and Argentina are the exceptions), by 2020 growth among NEET males considerably outpaced the increases observed among women. However, the percentages of women excluded from the labor market and education rose to levels greater than 20 percent (40 percent in Mexico) in the early stages of the pandemic. Given that school enrollment did not register major variations, the changes mainly reflect an exit from the labor market to a condition of inactivity.



Graph 2.9

Percentage of Latin American youth neither studying nor gainfully employed, 2019–2020, disaggregated by sex



Nota: Figures are for young people aged 20 to 24 years old. For Colombia, February, May, August, and November are used as a proxy for the quarter, as the 2020 Large Integrated Household Survey (IHS) did not collect information on student attendance in the months of March and April.

Source: Own calculations based on household surveys (Appendix II.3).

In most of the countries where data allow us to observe quarterly dynamics during the period (Argentina, Brazil, and Mexico), we see that after a larger increase, the percentage of NEET males falls more rapidly than that of women, which may reflect the additional demand on women’s time for domestic activities and caring for household members, which prevents a more agile return to the labor market.

Deterioration in Quality of Educational Interaction

The data reveal fundamental disparities in students' ability to access and use virtual platforms:

- The move to the distance education modality was usually accompanied by a weakening of the link between student and school, reflected in inconsistent and poor-quality student-teacher interaction.
- Analysis needs to differentiate internet access itself from its effective use in online education. Information is still scarce in Latin America, and that difference is reflected only on a few surveys in the region.
- Access to the internet, and consequently to a virtual educational platform and other online resources, was very unequal; the lack of access affected primary school students, rural areas, and public schools the most



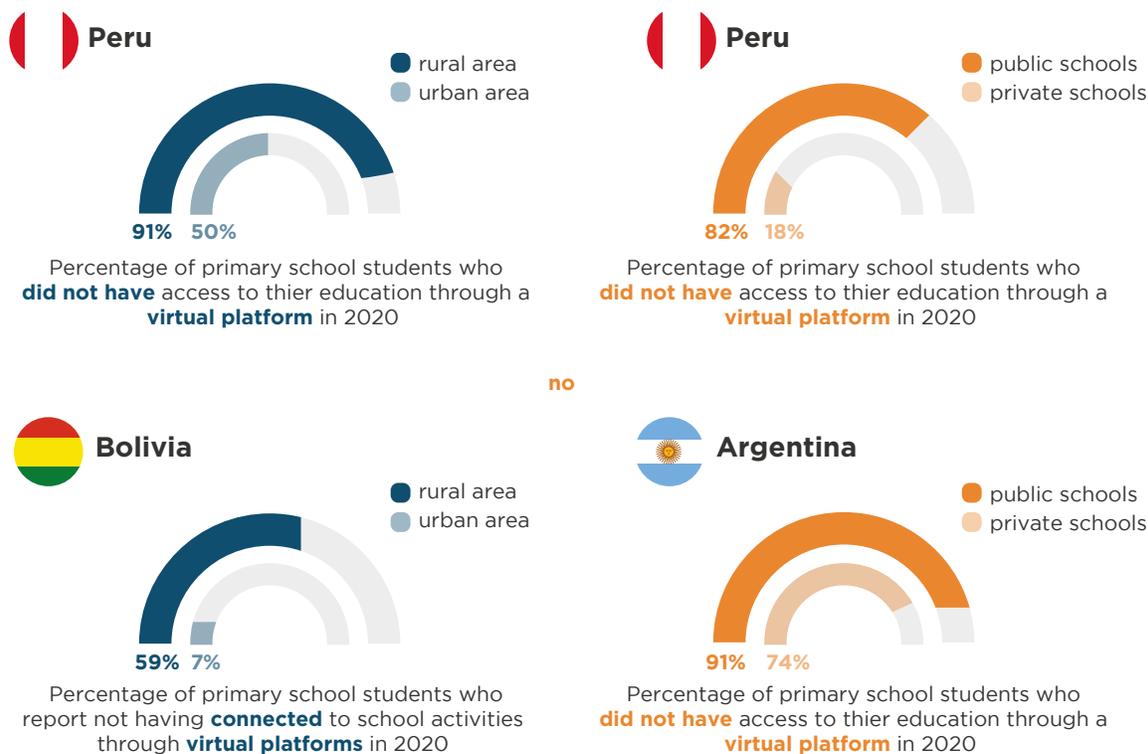
Fewer Hours and Poorer Quality

In addition to its effect on the number of hours spent studying, the pandemic had a significant negative effect on the quality of teacher-student interaction. In a time when students have not attended classes regularly, many have not had constant accompaniment. **The digital divide implies an unequal impact.** In many areas, the technological infrastructure to maintain a link with the school and facilitate distance education is nonexistent, and when it does exist, not everyone has the same level of access to the technological resources (Graph 2.10).



Graph 2.10

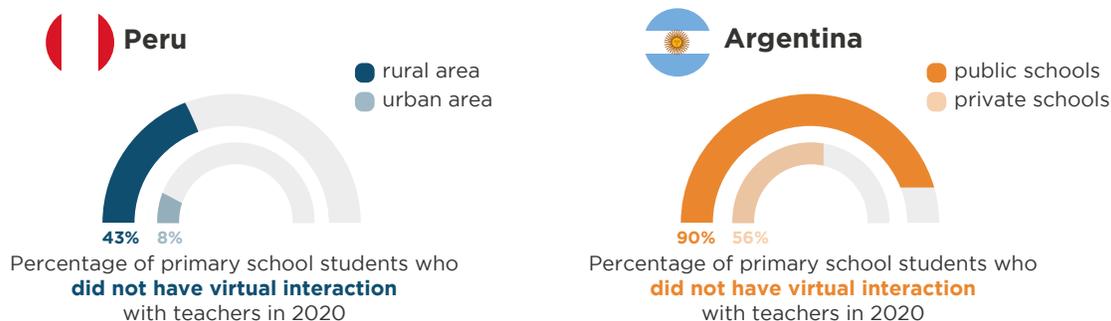
Access to a virtual platform, by country, area of residence, and type of school, 2020



Source: Data from Bolivia and Peru, own calculations from household surveys (Annex 1). Data from Argentina from the Households module of the National Evaluation Survey of the Pedagogical Continuity Process, Ministry of Education (2020).

Graph 2.11

Student interaction with teachers in the distance education modality, 2020



Source: Data from Bolivia and Peru, own calculations from household surveys (Annex 1). Data from Argentina from the Households module of the National Evaluation Survey of the Pedagogical Continuity Process, Ministry of Education (2020).

Despite the efforts of teachers, families, and authorities to guarantee the continuation of school activities, the pandemic has weakened the bond between students and teachers, and between family and school. According to CIMA data, most countries in the region lack the necessary conditions to provide optimal online education, especially to students from the most vulnerable backgrounds. For example, just 22 percent of children under 17 years old in public schools in vulnerable socioeconomic environments have access to the internet and only 19 percent have a computer in their homes (Rieble-Aubourg and Viteri 2020).

Direct interactions between teachers and students were more frequent in private schools than in public schools. **Lockdown was even more harmful for students of lower socioeconomic status and those with limited access to technology and connectivity.** In contrast, students of higher socioeconomic status, who often enjoy access to private services and reside in homes with better access to technology and connectivity and generally better conditions for learning, faced the pandemic from a more favorable context. Therefore, a worsening of educational inequalities is to be expected.

The international literature provides some additional explanations for the differences between most vulnerable households and those of higher socioeconomic status. In addition to effective access to the internet, including electronic devices (Thorn and Vincent-Lancrin, 2021), the literature has identified a tenfold greater likelihood of wealthier families resorting to private tutors relative to poorer ones (Azevedo et al., 2021). In the United States, based on Google Analytics, there is a greater search for online educational resources in high-income areas (Bacher-Hicks et. al., 2020), as well as a greater propensity to learn at home (Musaddiq et. al., 2021).

In reference to the quality of education in pandemic times in Latin American countries, some surveys' COVID-19 modules, such as the household surveys in Peru and Bolivia, added questions on the effective use of technology, inquiring about the type of classes received, the web media used, and whether there was interaction between students and teachers.⁸ In Argentina, the National Evaluation Survey of the Pedagogical Continuity Process, a nationally representative survey conducted by the Ministry of Education in 2020, also included questions on number of hours dedicated to study and means of communication between students and teachers.

⁸. See Appendix II.1 for more detail on the questions on distance education, means of access to remote education, and interaction with teachers in the household and Ministry of Education's surveys.





Inequalities in Virtual Access to Teachers

The results reveal inequalities in access depending on where children reside (rural versus urban) and whether they attend public or private institutions, with the differences being more marked for primary school children. In Peru, while 91 and 82 percent of students aged 6 to 11 years old residing in rural areas and assisting public schools respectively did not report access to an education platform, only 50 percent of primary school students living in urban areas and 18 percent of private school students did so. Data on virtual interaction with teachers indicate that in the country's public schools, part of the lack of access to an education platform could be remedied by resolving doubts and holding direct class sessions via video call with teachers at least once a week.

Argentina's survey did not include the urban-rural variable, but variability in the quality of education is reflected in the differences in means of communication used by students and teachers in public and private schools. In this regard, most primary school students had no access to a virtual educational platform, no matter the type of school (91 percent of public school students and 74 percent of private school students). The most important difference between public and private schools is seen in the percentage of students with access to live sessions with their teachers, with gaps of more than 20 percentage points at all educational levels. In contrast, unidirectional interactions, less effective in the educational process, are the ones that prevailed in public schools. For example, public schools were much more likely than private schools to use text messages or WhatsApp, television and radio, or printed material published by the Ministry.

In Bolivia we also see inequalities in terms of internet access and the use of virtual educational platforms as the main means of education during pandemic times. 7 percent of 6-to-11-year-old students in urban areas, versus 59 percent of those in rural areas, reported not connecting to school activities via internet. In addition, among the poorest, only 71 percent were able to connect, compared to 91 percent among the richest.



In Chile, one out of three students nationwide was severely limited to access internet at home.⁹ In Ecuador, almost 20 percent of the total primary school enrollment lacked the necessary conditions for school connectivity, a figure that reaches 31 percent among the poorest and 42 percent among students in rural areas.

In Uruguay, where Plan Ceibal (the Ceibal Project) was designed to provide students, teachers, and schools with technology. In this regard, 86 percent of 3rd- and 6th-grade teachers reported having continued their educational teaching process through virtual platforms during the pandemic (INEEd, 2021). The country also stands out for having had a faster return to the face-to-face modality, which occurred in the months of October and November 2020, with 84 percent of 6th-grade students attending school five days a week by then. Even so, differences according to socioeconomic status are also observed in school attendance, with 95 percent of students in a very favorable economic situation regularly attending school compared to 69 percent of students in an unfavorable economic situation.



In addition to the marked inequalities in access to distance education by household income, area of residence, and type of school, it has become evident that the emotional well-being of all those involved in the educational process is another factor that should be analyzed. As described by Rivas (2020), in the so-called “pedagogy of the exception,” it is not only the presence, time, routine, and clarity in the learning process that have fallen. Along with this, the curriculum, its scope, school motivation, and general harmony have also been dismantled as we live in a state of exception in all areas, which undoubtedly reaches the classroom as well.

9. This refers to the difficulties students have to connect to the internet, which is understood as the synchronous connection between teachers and students (Educar et al. 2020).



Emotional Well-Being: A Factor to Be Taken into Account

The recent data hold clues about how emotional well-being has affected learning during the pandemic:

- Perception surveys reflect that students feel little motivation for distance education.
- Students, caregivers, and teachers present symptoms of emotional distress.
- Baseline surveys in vulnerable populations in Honduras show a correlation between students' mathematics learning and anxiety levels.



The analysis of the perceptions of remote education during lockdown and the socio-emotional state of families, students, and teachers allow us to get a clearer picture of the school dropout situation, in addition to highlighting other difficulties that remote education presents in times of health emergency, especially social and emotional difficulties.



Perceptions Held by Students, Caregivers, and Teachers

Results of different perception surveys indicate inadequate student–teacher interaction and low levels of peer-to-peer contact during the pandemic. Such surveys have also found an impact on students’ motivation and emotional well-being, and the fact that many perceive the quality of education during pandemic times to be poor. The results of recent IDB-supported information surveys in Colombia and Brazil (García, Maldonado, and Abondano, 2021; Itaú Social, 2021) show the effects of the pandemic on learning and the emotional well-being of families and students, especially among most vulnerable families, highlighting the fact that a percentage of students may not continue to enroll to school the next year as a consequence of it.

In Colombia, in collaboration with the Universidad de los Andes, a survey of a representative sample of 1,234 households with preschool, primary school, and secondary school children in public schools, was conducted in the first half of 2021 (García, Maldonado and Abondano, 2021). Nearly 50 percent of surveyed caregivers report that children in the home are not motivated to do homework and show at least one symptom of frequent emotional distress (such as sadness, anger, emotional overload, and difficulty concentrating) and that such distress has intensified during the pandemic. One in four caregivers say they are concerned about the possibility that the student will not enroll the following year, a concern that is highest for caregivers of minors in secondary education.

In Brazil, Datafolha, with support from Itaú Social, the Lemann Foundation, and the IDB, conducted seven rounds of surveys, between 2020 and 2021, of public school students aged 6 to 18 years old, caregivers, school principals, and teachers. In round six, which compares May 2020 to May 2021 for a sample of 1,940 students, it was identified that student demotivation and difficulty in maintaining routine had increased. A higher percentage of students also reported their fear of dropping out of school. Among the challenges imposed by routine, about 50 percent of the students reported the difficulties carrying out school activities at home implies. According to caregivers, most students are anxious about homeschooling: 45 percent consider that children are irritable and 37 percent report that they are sad.

In Argentina, the National Evaluation Survey of the Pedagogical Continuity Process¹⁰ identified the same concerns about socio–emotional factors. Teachers, students, and caregivers reported difficulties in the process of educational continuity. 51 percent of teachers indicated “the uncertainty/ instability/ stress of the current situation and its impact on the organization/performance of tasks” as a difficulty brought about by the pandemic, and 36 percent reported “difficulties in the compatibility of work tasks with domestic/ care tasks (for example, due to lack of time or space at home)”. Teachers also claimed that nearly half of their students experience socioeconomic difficulties (housing, food, etc.) and that families lack the time to help their students with their homework (69 percent in initial education). In addition, 6 percent of teachers reported that their students experience family violence.

¹⁰. This was a nationally representative survey of teachers, principals, and families for the purpose of obtaining education information in the context of the pandemic. The survey collected information by telephone between June and July 2020 from 2.658 caregivers, 956 adolescents, and 21.471 teachers (Ministerio de Educación Argentina, 2020a, 2020b).



With respect to sustaining their children's schooling and intentions to keep them in the same schools in which they started the 2020 school year, 10 percent of caregivers of students of all ages indicated that they will not enroll their children next year or do not know if they will be able to do so. The percentage of students at risk of not continuing education increases in early education (14 percent). For students aged 13 to 19 years old, the National Evaluation Survey of the Pedagogical Continuity Process also inquired about their experience with remote education during lockdown, finding a higher percentage of adolescents in public schools (47 percent) than private schools (39 percent) who feared not to learn anything if they did not return to face-to-face classes. Additionally, four out of ten students reported the presence of feelings such as anguish, fear, and depression. These patterns of negative feelings are more prevalent in public school students and in females.

Box 2.1 The Effects of the Pandemic on Youth Mental Health and Well-Being

The pandemic has brought unprecedented changes and challenges into the lives of youth. Pandemic-related school closures have disrupted the lives of students. Households are suffering from the socio-emotional impact of lost livelihoods; substance abuse and domestic violence have increased; and youth have often lost caregivers or other loved ones. Many have been less physically active, had irregular sleep patterns and less favorable diets, and have been unable to interact with peers. There is an urgent need to understand the impact on youth mental health of pandemic-related social-distancing measures and other pandemic-related challenges, including risk and resilience factors (Fegert et al., 2020).

A 2021 survey of some 5,000 11-to-18-year-olds in Belize, Colombia, and Costa Rica begins to explore the pandemic's effects on the social and mental health of youth in Latin America and the Caribbean (LAC) (Näslund-Hadley, Hernández-Agramonte and Olivares, 2022). The findings suggest a devastating toll of the pandemic on LAC youth. Youth and their caregivers responded to the Strengths and Difficulties Questionnaire, a brief emotional and behavioral screening tool that has been extensively validated in the literature over several decades for the measurement of both prosocial behaviors and challenges such as conduct problems, hyperactivity, and socio-emotional problems.

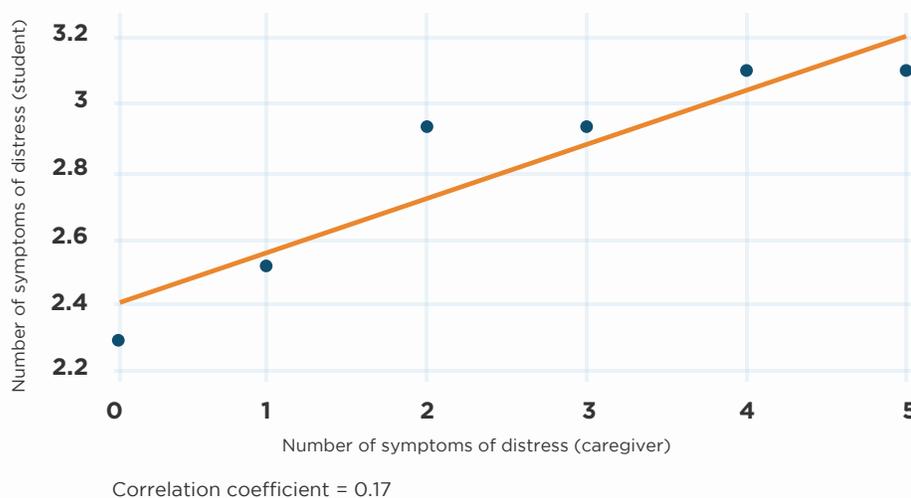
One in five youth reported experiencing hyperactivity that they attribute to pandemic-related challenges. One in three experience emotional symptoms, including fear, anger, sadness, worry, numbness, frustration, or issues with classmates. Female youth report a 26 percent greater increase in the likelihood of suffering distress symptoms than their male peers. These findings were roughly consistent across countries.

Although the deterioration in mental health that youth report likely stems from a wide spectrum of factors, the survey points to two major pandemic-related stressors. First, the economic impact of the pandemic affected the well-being of youth. Seven in ten households in the survey reported lost income through loss of employment and two in ten a decrease in wages due to the pandemic. Many households also reported that they had to decrease the number of meals or size of portions. Among households that lost income or employment during the pandemic, distress levels were much higher for youth than for households that maintained their income level.

Second, a deterioration in caregivers' well-being is likely transmitted to their children. Caregivers report having suffered through many additional stress factors throughout the pandemic, such as worrying about the family's health, their job security, and their children's education. Survey findings show that the higher the caretaker's distress level, the higher the adolescent's level of distress. This positive correlation is more pronounced in households that reported employment loss or decrease in income. Additionally, caregivers' concerns about school reopenings and their health protocols also affect their youth's concerns and distress. Among households where caregivers expressed concern regarding schools reopening or COVID-19 protocols, youth reported higher levels of distress (4 percentage points). Not surprisingly, in households with high levels of family conflict, youth reported higher levels of distress.

Graph 2.12

Symptoms of socio-emotional distress of caregivers and students

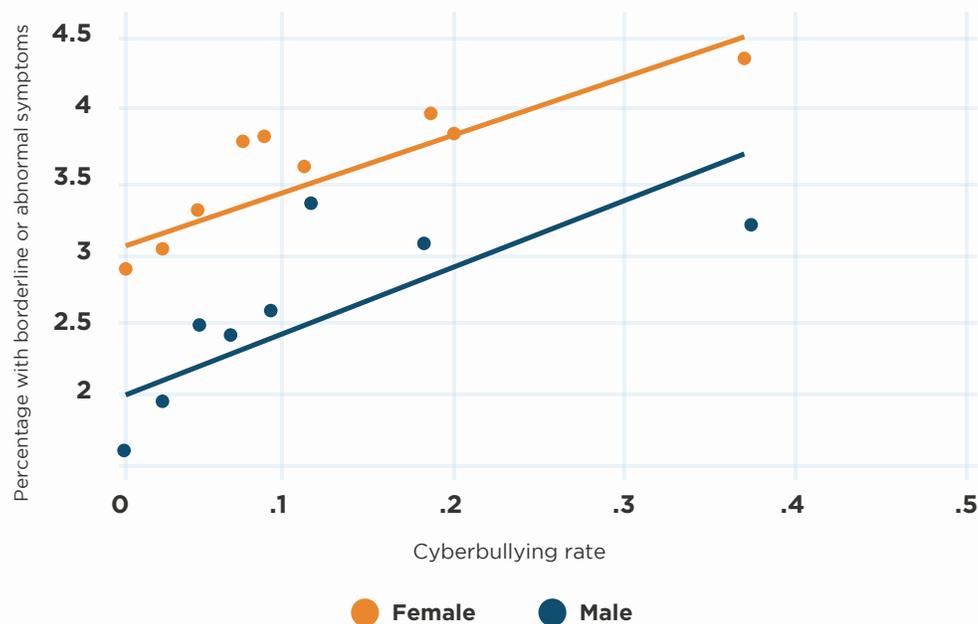


Source: Näslund-Hadley, Hernández-Agramonte and Olivares (2022).

With the world becoming virtual due to the pandemic, bullying incidents also turned to the online world. Six out of ten youth surveyed reported experiencing at least one form of cyberbullying in the previous week. These incidents of cyberbullying also came with an increase in distress felt by youth. The distress levels of students did not vary based on whether they engaged in remote learning, had face-to-face lessons, or followed a hybrid model. However, survey findings show a significant positive correlation between experiencing cyberbullying and distress in youth. Over a third of youth who experienced cyberbullying reported feeling at least one symptom of socio-emotional distress. And about six in 10 youth that reported experiencing cyberbullying were female. Survey findings show a positive correlation between cyberbullying and experiencing distress, with higher rates for females.

Graph 2.13

Relationship between cyberbullying and socio-emotional distressg



Source: Näslund-Hadley, Hernández-Agramonte and Olivares (2022).

Students who reported higher levels of distress also stated a stronger intent to migrate compared with peers with lower levels of distress. Similarly, about eight in ten students who experienced cyberbullying reported an interest in migrating. Additionally, youth who mentioned family conflict as their main reason for wanting to migrate had higher levels of distress compared with peers who stated other reasons.

A silver lining is that the survey does reveal high levels of prosocial norms and behaviors. About nine out of ten youth reported prosocial behavior, meaning that they were behaving in ways that benefit others. During the pandemic, youth report that they are helping and sharing with friends and family, donating, cooperating, and volunteering to benefit their communities.



Emotional Well-Being and Educational Attainment

As part of the projects that the IDB is promoting in the region as a response to the pandemic are the evaluations that are being conducted using experimental methods that include baseline surveys to quantify the impact of interventions in basic math and Spanish skills. The questionnaires also inquire about socio-emotional well-being, socioeconomic level, and socio-demographic characteristics at home, which allows for cross-checking information indicative of the influence of these variables on test performance.

The interventions target students from economically vulnerable backgrounds in different countries in the region, and although the samples are not representative of each country, they do give us insight into the relationship between student well-being and learning. The results reflect negative symptoms in students and caregivers, a positive relationship between students' reported level of well-being and math test scores, and greater negative emotional symptoms in girls and high school students.

Preliminary results from baseline surveys in the region show a high correlation between elevated levels of anxiety and poor performance on tests that assesses basic math skills. In Honduras, in a project using the Kolibri platform with students in the third cycle of basic education (7th, 8th, and 9th grades) in the area of Intibucá, we observe a high percentage of well-being problems in both caregivers and students. It is also evident that female caregivers report a higher prevalence of well-being problems. Also, in families in the lowest deciles of the socioeconomic scale, there is a greater perception of the existence of problems, and students with poorer academic performance experience more tiredness and sadness.

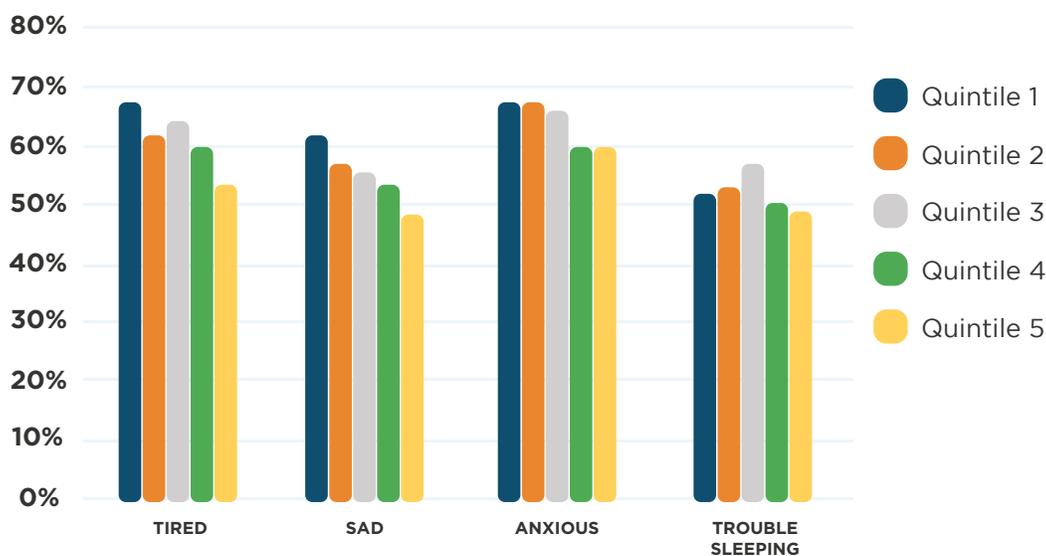




Graphs 2.14 and 2.15 display caregiver and student sentiment by socioeconomic status over a four-week period prior to data collection.¹¹ In these graphs we can clearly observe that for both caregivers and students in the highest quintiles (four and five) the prevalence of tiredness and sadness is less pronounced than in the lower quintiles. Finally, Figure 2.16 shows students’ feelings according to their performance quintile on the standardized math test. It can be noted that students with higher scores perceived themselves as less tired and less sad.

Graph 2.14

Caregiver feelings in the last four weeks by quintile of socioeconomic status—project baseline with the Kolibri platform in Honduras



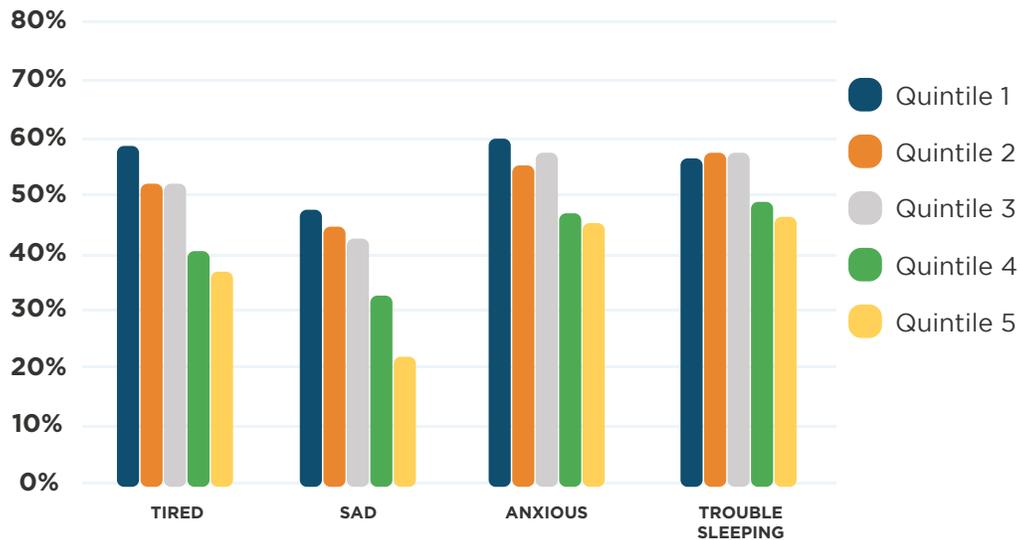
Source: Prepared by the authors based on the results of the baseline survey of the Kolibri platform project in Honduras.

11. Measured through an index of asset holdings within the household and caregiver education.



Graph 15.

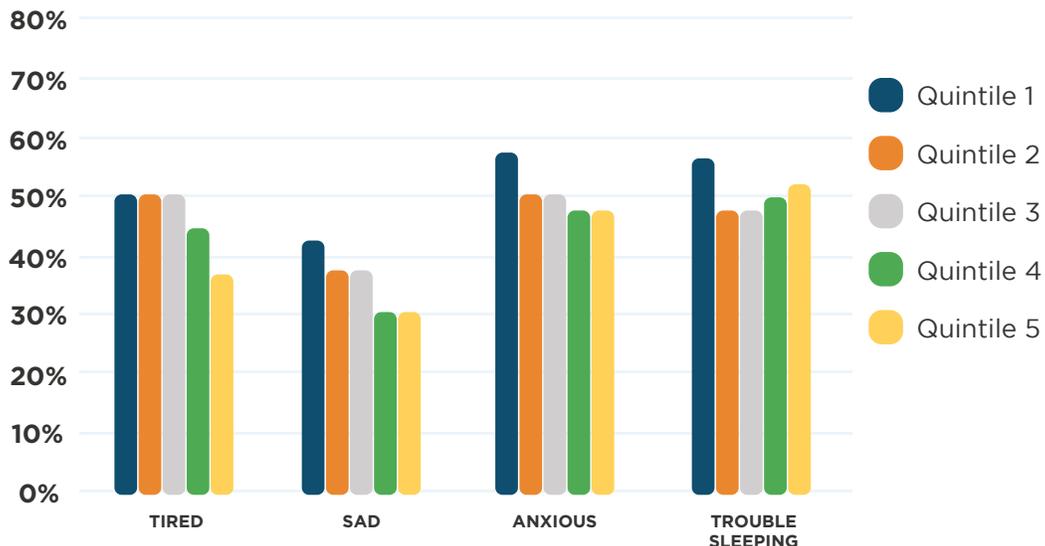
Student feelings in the last four weeks by quintile of socioeconomic status—project baseline with the Kolibri platform in Honduras



Source: Prepared by the authors based on the results of the baseline survey of the Kolibri platform project in Honduras.

Graph 2.16

Student performance by quintile of standardized math test score—project baseline with the Kolibri platform in Honduras



Source: Prepared by the authors based on the results of the baseline survey of the Kolibri platform project in Honduras.



Although these pandemic-era studies show that students in distance education are often poorly motivated, that students often have a poor perception of the virtual learning modality, and that students demonstrate lags in basic knowledge, it is not possible to link such results directly to the pandemic. They only represent a snapshot of education in this period. To demonstrate changes in learning, we must look at the standardized tests students have taken in the region.

Some Evaluations Confirm Large Learning Losses

In this section we seek to understand the effects of the pandemic on students' lives and how those effects relate to academic proficiency by examining standardized test data from four countries in the region. We begin by looking at Brazil, where it was possible to obtain a causal estimate of the effect of the pandemic on learning outcomes. We then show evidence of the changes occurred among test takers between 2019 and 2020 in Colombia, Jamaica and Barbados.



Brazil: Losses Equivalent to 72.5 Percent

Lichand and colleagues (2021)¹² conducted a study in the Brazilian state of São Paulo employing data from quarterly standardized tests to measure the pandemic's impact on learning outcomes.

Throughout 2020, the State Secretariat of Education, responsible for secondary and primary students in the state, conducted quarterly standardized tests (Avaliações de Aprendizagem em Processo, AAP) on the same scale as in the years prior to the pandemic. These tests are not mandatory (although the state promotes them strongly, and they usually have a participation rate of no less than 80 percent, which was maintained even during school closures).

State schools moved to remote learning by the end of the first school trimester, after the test corresponding to that period was taken. This provides a natural experiment: in São Paulo, classes were held face-to-face only in the first quarter (Q1) and were conducted remotely thereafter (Q2 through Q4), but exams were done remotely in all school quarters. Using the variation provided by this experiment, a differences-in-differences strategy is applied to estimate the pandemic's impact on learning, and then the methodology is refined to account for selection bias.

12. Lichand et al. (2021)



These remote exams can be taken online, through a proprietary zero-scoring platform powered by the Secretariat of Education, or picked up and delivered in person at the school. São Paulo provides a favorable environment for transition to remote education as there is not a wide digital divide as in other contexts. There is extensive 3G and 4G coverage throughout the state and good connectivity in schools. The 2019 SAEB (National Basic Education Evaluation System) survey shows that 73 percent of students have at least one computer at home and 26 percent have access to at least one tablet. This survey does not provide information on access to cell phones. These figures are similar for ninth graders with 86 percent of households with a Wi-Fi connection, 70 percent having access to at least one computer, and 36 percent with access to at least one tablet. It should be noted that the survey does not provide disaggregation of these figures by socioeconomic group, so it is likely that there are differences along the socioeconomic-level curve. The education platform is free, and the state offered cell phone chips so that students and teachers could navigate to other websites.

This study uses quarterly data on student attendance, math and Portuguese scorecard scores, and standardized test scores, for the universe of students in grades 6 through 12 in the state of São Paulo, between 2018 and 2020. Restricting attention to 2019 and 2020, our data comprise 4,719,696 observations for primary students and 3,791,024 for secondary school students. However, data on standardized test scores are present for 83.3 percent of the observations. This indicates that probably, since the tests are not mandatory, not all students show up to take the exams. This is a pattern that we will see repeated in all countries, where families have felt the effect of the pandemic to such an extent that some students have not continued their academic path as in other years.



Table 2.1 presents different estimates of the effects of distance learning on high dropout risk (in percentage points; panel A) and standardized test scores (in standard deviation, s.d.; panel B). The first two columns present comparisons between students that do not isolate the causal effect of interest but provide a benchmark. Column 1 contrasts the last school quarters of 2019 and 2020; and column 2 contrasts the variation between the last school quarters of 2019 and 2020 with the corresponding ones in 2018 and 2019. Columns 3 through 5 then present our estimates using techniques that isolate the causal effect of interest. Column 4 flexibly controls for systematic differences between students' probabilities of taking the test to analyze selection effects; and column 5 weights observations so that groups with different probabilities of taking the test are comparably represented.

Table 2.1

The effects of remote learning on school dropout and learning outcomes

	Q4 2020- Q4 2019	(Q4 2020-Q4 2019)- (Q4 2019-Q4 2018)	(Q4 2020-Q1 2020)-(Q4 2019-Q1 2019)		
	(1)	(2)	(3)	(4)	(5)
Panel A: High dropout risk					
Remote learning	0.0662	0.0691	0.0621	0.0621	0.0621
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Mean 2019 Q4	0.017	0.017	0.017	0.017	0.017
N	4,271,928	6,724,744	8,543,586		
Panel B: Standardized test scores					
Remote learning	0.652	0.523	-0.314	-0.301	-0.319
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
In-person learning equivalent	0.44	0.44	0.44	0.44	0.44
N	3,688,042	6,367,375	7,097,042		
Grade fixed effects	Sí	Sí	Sí	Sí	Sí
Matching	No	No	No	Sí	Sí
Inverse probability weighting	No	No	No	No	Sí

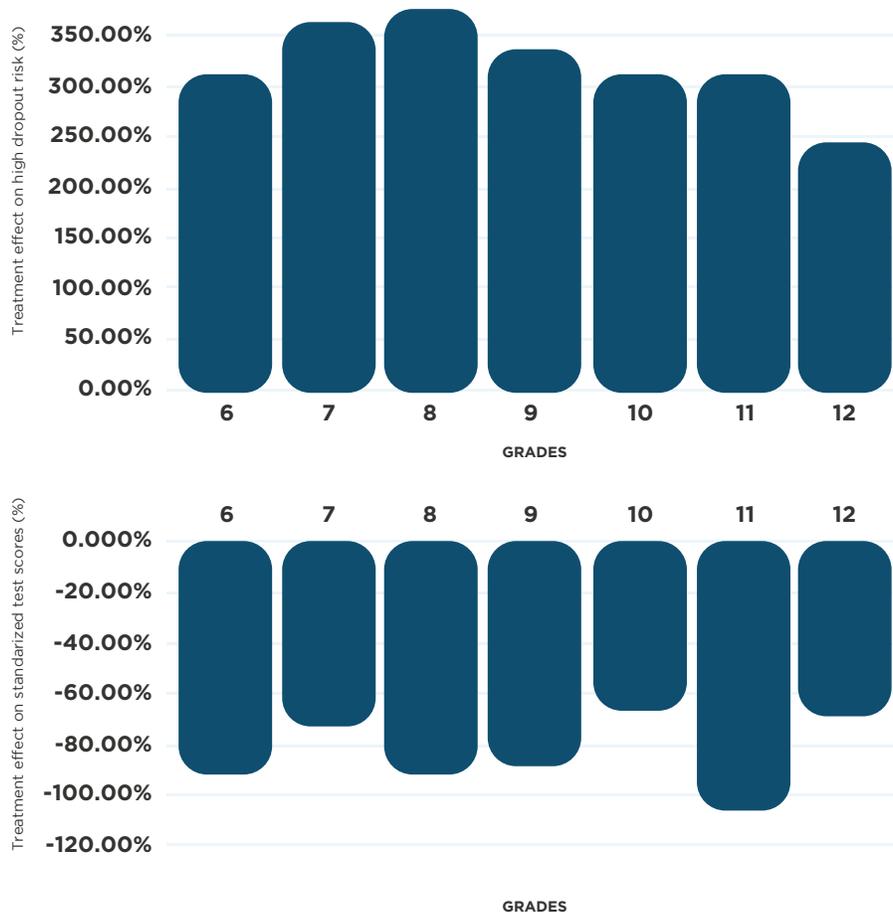
Nota: The table displays treatment effects of remote learning on educational outcomes. In column 1, we compare Q4 2020 to Q4 2019. In column 2, we compare variation between Q4 2019 and Q4 2020 to that between Q4 2018 and Q4 2019. In columns 3 to 5, we estimate differences-in-differences comparing variation in outcomes between Q1 and Q4 2020 to that between Q1 and Q4 2019. In panel A, the dependent variable is high dropout risk (= 1 if the student had no math or Portuguese grades on record for that school quarter, and 0 otherwise). In panel B, the dependent variable is scores from quarterly standardized tests (AAPs), averaging math and Portuguese scores for that school quarter. All columns include grade fixed effects and an indicator variable equal to 1 for municipalities that authorized schools to reopen from September 2020 onward, and 0 otherwise (allowing its effects to vary at Q4). In columns 4 and 5, we control for the propensity score of selection into exams with third-degree polynomial. In column 5, we also reweight observations by the inverse of their propensity score. All columns are ordinary least squares regressions, with standard errors clustered at the school level.

Source: Author's own elaboration.

The table shows that when it comes to learning losses, naive comparisons over the years would lead one to incorrectly conclude that test scores have actually increased during remote learning (columns 1-2). Our preferred specification reveals dramatic losses, of 0.32 s.d. (significant at the 1 percent level; column 5), a drop equivalent to 72.5 percent ($0.319/0.44 = 0.725$) of the face-to-face learning equivalent.

Graph 2.17

Heterogeneous effects on learning by grade



Nota: The figure displays heterogeneous treatment effects of remote learning on educational outcomes by grade. Each effect size stands for a differences-in-differences estimate from grade-specific ordinary least squares regressions. All regressions follow the specification in column 5 of Table II.1, only restricting observations to each grade. In panel A, the dependent variable is high dropout risk (= 1 if the student had no math or Portuguese grades on record for that school quarter, and 0 otherwise). In panel B, the dependent variable is scores from quarterly standardized tests (AAPs), averaging math and Portuguese scores for that school quarter. We normalize each effect size by its baseline mean, to express them in percentage changes: in panel A, we divide estimates by the variation in the percentage of students with dropout risk = 1 between Q1 and Q4 2019 within each grade; in panel B, we divide estimates by variation in standardized test scores between Q1 and Q4 2019 within each grade. All columns include an indicator variable equal to 1 for municipalities that authorized schools to reopen from September 2020 onward, and 0 otherwise (allowing its effects to vary at Q4), a third-degree polynomial of propensity scores, and reweight observations by the inverse of their propensity score. Confidence intervals are based on standard errors clustered at the school level.

Source: Author's own elaboration.

Graph 2.17 shows the heterogeneous treatment effects by grade (estimates based on Table II.1, column 5). Panel A shows effect sizes on dropout risk, normalized with respect to their Q4 2019 average within each grade, and panel B, those on standardized test scores, normalized with respect to the average difference between Q1 and Q4 2019 within each grade.

It is worth noting that the negative effects are significantly concentrated in the most vulnerable populations: girls, non-white students, and schools located in the poorest neighborhoods and that did not offer online academic activities prior to the pandemic. **This highlights the serious distributional consequences of the pandemic, where we would see a widening of the learning gaps that numerous initiatives have sought to close in recent times.**



"The data indicates serious distributional consequences and a widening of the learning gaps that have been tried to close through numerous initiatives in recent times."

Caution When Analyzing Learning Test Results

Although standardized tests have been applied at the national level in some countries, using such information to estimate whether learning losses occurred presents multiple difficulties in identifying the effect of the pandemic.

First, **standardized tests have had to be adapted to follow biosafety protocols:** they have become shorter tests with less content, in contexts different from previous years. This raises doubts about the validity of comparisons across years since, even with identical distributions of students, the difference between formats may have introduced systematic differences in scores that are not due to the effects of COVID-19 on learning.

Second, the evidence from these countries underscores one clear fact: **the pandemic has had such an impact on families in the region that many students did not take part in testing during 2020.** This was the case in all the countries analyzed, where we found evidence of losses of students evaluated both in the lower tail and in the upper tail of the learning curve. This is described in more detail in the following section.



Third, some countries, such as Colombia, provide self-reported student **information at the time of testing**, which may reflect transient characteristics due to the impact of the pandemic. **This implies that data on characteristics obtained from students affected by the pandemic should not be included in our analysis.**¹³ For example, students in 2020 may report being of low socioeconomic status because their family fell into that category due to the impact of COVID-19, whereas in any other year they would have been of middle socioeconomic status; or the students who need to work in 2020 could be systematically different from the students needing to work in 2019, since the composition of the former group incorporates both transient and structural workers. As we will see in the following sections, the proportion of students who reported working at the time of taking the test increased in 2020 and losses of test takers were mostly concentrated in lower socioeconomic strata. This, coupled with reports of job losses due to the pandemic, raises doubts about the validity of comparing students using cross-sectional data.



13. This makes analyzing the results difficult because, when analyzing the effects of COVID-19 using observational methods such as propensity score matching, we need to be able to compare students with the same characteristics. The fact that the observable characteristics have been altered by the pandemic phenomenon invalidates the possibility of making comparisons since, possibly, students who are being compared are similar in characteristics due to the impact but would be very different in its absence. The Mostly Harmless Econometrics section in "Bad Controls" can be referenced. See: Angrist and Pischke (2008).



Decline in the Number of Students Taking the Exams

Colombia, in line with measures implemented in the rest of the countries, closed its schools on March 16th, 2020, one month after most schools in the country started the school year. According to the results of the census of educational establishments of the National Administrative Department of Statistics (DANE, 2021), approximately 10 million students at the pre-, primary, and secondary school levels were affected by the school closures. In just a few days, schools began to implement technology-mediated, remote-education-based learning processes. However, the high heterogeneity of the schools raised doubts as to whether they were all able to adapt to the new conditions.

Following the school closures, in mid-March 2020 Columbia's education sector, led by the Ministry of National Education, began a process of adaptation to the new conditions. The work plan established two priority fronts: (1) curricular flexibility and prioritization of learning and (2) design and delivery of materials through different technological and audiovisual media (Ministerio de Educación Nacional, 2021). However, carrying out such prioritization of learning and its respective follow-up is very difficult. As Álvarez et al. (2020) point out, Colombia is the only country in the region that does not have a single curriculum or structured material for nationwide use. Thus, faced with the new conditions, many teachers and schools were left without a clearly defined road map. Even before the pandemic, there were discussions about the negative effects of the absence of a national curriculum and how this interfered with teachers' work (Garcia, 2018).

Colombia's technological conditions also made the process of transitioning to remote education more difficult. According to the Economics of Education Laboratory of the Pontificia Universidad Javeriana, 96 percent of the municipalities seemingly faced difficulties in virtual education at the beginning of the pandemic, considering that less than half of their students in the last grade of secondary education had computers and internet access. Moreover, nearly half of public school teachers do not have the skills required to successfully incorporate technological devices into their classes. Likewise, a survey applied by the same university to 762 official educational institutions in the country revealed that 27 percent of teachers completely interrupted their classes after the onset of the pandemic and that, on average, only four out of 10 students participated in asynchronous academic activities.



Our analysis uses official ICFES (*Instituto Colombiano para el Fomento de la Educación Superior* [Colombian Institute for the Promotion of Higher Education]) data on student performance on the high school exit exam, Saber 11, for the period between 2017 to 2020. The available databases contain information on overall and test scores, self-reported socioeconomic information, and school data. The Saber 11 census exam evaluates the competencies developed in the course of basic and secondary education and is a requirement for access to higher education programs. Thus, it is important to emphasize that the Saber 11 is not oriented to evaluate knowledge of a specific grade, but rather it is a high school exit exam.

The declaration of a sanitary emergency in Colombia in March 2020 and the biosafety conditions necessary for the application of the tests led to important modifications in their assembly and application. First, the number of sessions and number of questions were reduced: under normal conditions, test takers would attend two sessions of four hours and 30 minutes each on a Sunday and answer a total of 278 questions. In 2020, the test was conducted over several days and students attended only one session of five hours and 30 minutes with a questionnaire consisting of 188 items. Despite these changes, ICFES reported that it maintained the competency and evidence-based test design and conducted additional analyses of differential item performance to ensure comparability of scores with the historical series.



In this study, **we observe that the pandemic has affected families such that the composition of students who took the Saber 11 exam during 2020 is systematically different than that of those who took the Saber 11 exam in 2019.** And these systematic differences affect not only the lower tail of the score distribution but also the upper tail. With the pandemic, we see that the proportion of students taking the test and working at the same time has increased. The average socioeconomic status of the test takers has also risen between 2019 and 2020, as students from lower socioeconomic strata refrained from taking the test. However, at the same time, the study presents evidence that there may also be strategic attrition in the upper tail of scoring. The Colombian

14. Academic paper from Colombia available upon request with more information on study details.



national government issued Decree 532 in April 2020, temporarily exempting students in the last grade of secondary education from taking the Saber 11 exam as a condition for access to higher education. However, the requirement to submit the results of this exam before gaining admission to a university degree was maintained. This may have influenced the motivation and effort of some of those students evaluated, since the exam ceased being a requirement for admission to a higher education institution.

With the 2019 and 2020 student data, we identified 9,790 schools that tested on the Saber 11 exam in both years and we defined two major groups: (1) schools that had the same number of or more test takers in 2020 than in 2019 (4,544), and (2) schools that lost test takers between the two years (5,246). However, many factors could lead to a reduction in the number of students taking the test from one year to the next, as we have already mentioned some. Therefore, we divided the second group of schools into deciles according to the proportional loss of test takers and concentrated the analysis on those with the largest reductions (deciles 8 through 10). The data indicate that schools with the highest proportional losses in the number of test takers are those with the largest increases in Saber 11 scores: between 4.8 and 7.1 points (0.09 and 0.14 s.d.). On the other hand, the schools with the smallest drops in the number of students evaluated (deciles 1 through 3) do not display large variations in their scores.

Table 2.2

Characteristics of the schools that lost evaluatees in 2020

Decile of loss of evaluatees	Is an official school 2019	Percentage of students who work 2019	Percentage of students who have internet 2019	Percentage of students who have computer 2019	Percentage of students belonging to lowest socioeconomic group 2019	Socioeconomic index 2019
1	82.5%	27.8%	66.5%	60.8%	12.9%	51.71
2	82.2%	28.7%	64.8%	58.8%	14.1%	50.97
3	81.9%	29.0%	64.3%	59.1%	14.5%	51.21
4	83.9%	29.5%	63.2%	57.8%	14.2%	50.67
5	80.1%	30.5%	64.4%	58.6%	14.9%	51.08
6	83.8%	32.8%	55.0%	51.8%	20.3%	49.29
7	77.9%	33.8%	59.8%	55.0%	18.3%	50.09
8	75.2%	35.3%	52.5%	48.8%	21.3%	48.57
9	65.9%	38.2%	52.4%	49.0%	22.9%	48.67
10	38.9%	44.6%	53.5%	47.8%	22.3%	48.16

Source: Authors' calculations using ICFES data.





This result leads us to wonder about the characteristics of those schools that, at the same time they lost test takers, saw their Saber 11 scores increase. Therefore, in Table 2.2 we present a characterization of those schools in the year prior to the pandemic, comparing them with the schools that lost the fewest test takers (deciles 1 through 3). In the group of schools with the largest proportional drops in the number of students evaluated in 2020, we see an overrepresentation of nonofficial schools, of students from the lower socioeconomic levels, and of students with lower average scores on the Saber 11. In addition, the 2019 data show that even before the onset of the pandemic, the schools that lost the most student test takers already displayed higher numbers of students without internet at home and who were working at the same time as studying. The overrepresentation of low-quality private schools in the group of educational establishments

that lost the most evaluatees during the pandemic leads us to think about a possible migration of students from private schools. The Economics of Education Laboratory of the Pontificia Universidad Javeriana collected preliminary data from 33 of the country's 96 Secretaries of Education and found that at least 26,500 students had moved from private to public schools. **The reasons for this dynamic could be related to the negative shock to household incomes from COVID-19 and the inability of some private schools to adapt to the pandemic and, for example, provide technological support and tools to students, as well as training to their teachers.**

As was the case in Colombia, the Caribbean region was also heavily affected by the COVID-19-inspired school closures. Face-to-face classes in Jamaica and Barbados were interrupted in March 2020, and despite the efforts of the countries' governments and Ministries of Education, sanitary conditions have not yet allowed schools to reopen.¹⁵ To avoid interrupting the learning process, different policies for distance education were implemented, including elements such as virtual classes, television, radio, printed materials, study guides, social networks, and community blackboards. However, in general Caribbean countries lacked the basic digital conditions to reach all students (Rieble-Aubourg and Viteri 2020), and Jamaica and Barbados were no exception. This reinforced the already existing disparities between students in terms of access to technology, connectivity, and digital devices; general preparedness of teachers with respect to distance learning and education; and parental commitment to learning at home, all of which deepened already existing inequalities in terms of educational achievement between students from different backgrounds.¹⁶

15. Updated as of November 2021.

16. The Caribbean region has made remarkable progress in terms of access to the education system. However, when analyzing educational outcomes considering students from different socioeconomic strata, differences in terms of teaching and learning quality are evident, favoring those from better-off families.



Students in Jamaica are assessed several times throughout their primary and secondary education. Up to and including 2018, the Grade Four Literacy and Numeracy Test (G4LNT) assessed fourth-grade students' knowledge in language and math. Moreover, the Grade Six Achievement Test (GSAT) evaluated the knowledge of sixth graders, and its results were used as a mechanism for assigning students to secondary schools.¹⁷ In 2019, both tests were replaced by the 4th and 6th grade Preliminary Exit Profile (PEP), respectively. Unlike their predecessors, the PEP exams are focused on assessing student competencies instead of the curriculum per se, focusing on both knowledge and 21st century skills. The 6th grade PEP comprises three components: the Ability Test, the Performance Test, and the Curriculum-based Test. As with the GSAT, 6th grade PEP results are used as a mechanism for assigning students to the secondary school level. In Barbados, students are assigned to secondary schools through the Barbados Secondary School Entrance Examinations (BSSEE), which are taken at the end of primary school, or class 4. This is the only standardized test taken by students in Barbados at the primary school level. Finally, the Caribbean Secondary Examination Certificate (CSEC) is a regional certification issued by the Caribbean Examinations Council that assesses students' technical and general knowledge at the end of secondary school.¹⁸ Both in Jamaica and Barbados this certification is required for entry to higher education.

Despite the school closures, Jamaica attempted to continue with the planned evaluation scheme. For the 6th grade PEP, both in 2019 and 2020 students were assessed in the period between February and April.¹⁹ In 2019 students took all three components (ability, performance, and curriculum), whereas in 2020 they only took the Ability Test. For 2021, the exam was scheduled first for February, then for March, and finally it was taken in May, and students were again evaluated only in terms of the Ability Test²⁰. For 2022, the examination is planned for the months of March through June.²¹ In Barbados, the BSSEE was usually taken in May. In 2019 students were evaluated in May,²² but in 2020 and 2021 the exam was postponed to July²³. For 2022, the exam is also scheduled for July.²⁴ Regarding CSEC, examinations are usually taken twice a year, in January and June. In 2020, the June evaluation was taken in July. In 2021, the exam was taken in January and between the end of June and the end of July. This same scheme is planned for 2022.

17. <https://moey.gov.jm/>.

18. <https://www.cxc.org/examinations/csec/>.

19. In 2020, the Ability Test test was taken in February. See <http://digjamaica.com/>.

20. For secondary school assignment in 2020, test scores from the 6th grade Ability Test in 2020 were combined with 4th grade PEP scores from 2019 and G4LNT scores from 2018. In 2021, 6th grade PEP Ability Test scores will be combined with 2019 4th grade PEP scores. See: <https://www.jamaicaobserver.com/>.

21. <https://nationwideradiojm.com/>.

22. <https://barbadostoday.bb/>.

23. <https://barbados.loopnews.com/> and <https://mes.gov.bb/>.

24. <https://mes.gov.bb/>.

To explore the possible effect of school closures on different educational outcomes, we use primary school data for Jamaica and primary and secondary school information for Jamaica and Barbados. For Jamaica, data for the primary level correspond to the 6th grade PEP Ability Test, and students are grouped based on their prior ability, measured in terms of their performance on the G4LNT.²⁵ For the secondary education level, the analysis is based on the CSEC math and language tests, differentiating students according to their performance on the GSAT.²⁶ For Barbados, we only use secondary school data. In this regard, same as for Jamaica, the analysis is based on the math and language CSEC test results, differentiating students according to their performance on the BSSEE.²⁷



A common element present both when analyzing the results of primary education in Jamaica and those for secondary education in Jamaica and Barbados is the drop in the proportion of students taking PEP exams in Jamaica and CSEC exams in Jamaica and Barbados in 2020.²⁸ However, this reduction has different characteristics, both in terms of school levels and between countries. For the primary level in Jamaica and the secondary level in Barbados, attrition appear to be concentrated among the lowest performing students. In Jamaica, this is especially clear when looking at the 2011-2017 cohorts of the G4LNT, and slightly less marked for the 2018 cohort.²⁹ In Barbados, attrition is also seen in the lowest performing deciles, with drops in CSEC participation of up to 14 percent in 2020 compared to 2018. In this regard, the percentage of students taking the math and language examinations in the total number of students registered in CSEC falls in five of the last six performance deciles compared to previous years, while the proportion of students from higher deciles remains constant. These changes resemble those observed in Colombia, where student losses are also concentrated among the lowest performing students. It should be noted here that,

25. The results of the 6th grade exams for students who in 2019 were in 4th grade are those corresponding to 2021. Since those data are not yet available, the 4th grade PEP was not used for the analysis.

26. The information available for the G4LNT covers the period 2011-2018. Those data were matched at the individual level with PEP records, available for 2019 and 2020, and GSAT records, available for the period 2001-2018. For the secondary level analysis, GSAT data were matched at the individual level with CSEC records, available for the years 2005-2020.

27. For the secondary level analysis, BSSEE data were matched at the individual level with CSEC records, available for the years 1997-2020.



even in the absence of effects of the pandemic on learning, changes in the composition of the group of students taking the test can mechanically imply higher (lower) average learning outcomes than those corresponding to previous years, since the sample does not include those students with the worst (best) performance any longer.

For CSEC in Jamaica we also see a drop in the proportion of test takers by 2020, which, as in the case of the PEP exam, seems to be part of an earlier trend. However, in this case attrition is more concentrated among better-performing deciles. In this regard, while the proportion of students taking math and language in the total number of students registered in CSEC remains relatively stable between 2005 and 2016, from 2016 onward there is a notable drop. With this, the results highlight a preexisting dynamic in the rate of students tested in language and math that predates the COVID-19 pandemic. Moreover, when observing students according to their performance on GSAT, we can clearly see this trend is stronger for those that perform better at the end of primary school.

Based on these results, we can conclude that the student population in both countries was affected differently as a result of pre-existing characteristics and/or trends. In Barbados, it was the most vulnerable population the most affected by school closures and uncertainties in the education system. In Jamaica, this is true for primary school students. In this case, given that all G4LNT, PEP and GSAT examinations are compulsory for all students in the educational system, a possible hypothesis to explain these results is the exit of low-performing students from the system and/or migration to other countries. However, own analyzes would indicate that, in practice, not everyone takes the primary school final exam.



28. For the primary level in Jamaica, attrition is computed based on the total number of students registered in the 4th grade exam between 2011 and 2018 who could not be found later in the GSAT records corresponding to years 2013-2018 or in those of 6th grade PEP for the years 2019 and 2020. For the secondary level in Jamaica and Barbados, attrition is calculated as the variation in the proportion of students who took the math and language exams in the total number of students registered in CSEC.

29. Dropout rates fall monotonically between the 2017 and 2018 cohorts of the G4LNT. Moreover, this happens allowing up to a year delay for students who took the 4th grade PEP exam in 2017. When this same analysis is performed on the basis of other characteristics, such as gender, school, and region, the differences are not as marked.



For high school students, a possible explanation for the differential behavior between lower- and higher-performing students in terms of CSEC could be related to the value students in each group give to this examination. In Jamaica, Barbados and other Caribbean countries, the CSEC certification is a mandatory requirement for enrollment in four-year university programs, community colleges, teachers' colleges, and other tertiary education institutions. In order to obtain it, students must pass five subjects in a maximum of five years with grades between I and III, including language and math. However, it is up to each student to decide whether, when, and for which subjects to register. In this regard, it is possible that the cessation of in-person classes and limited access to private tutoring as a consequence of the pandemic may have motivated some students to defer taking the exam, so as to take it when they were better prepared. This could be the case for higher achievers, who are the ones who generally decide to take the CSEC with a view to qualifying for tertiary (or university) education. However, this hypothesis does not explain the drop observed in previous years.

Another factor to consider in the analysis of both primary and secondary level data is the fact that in the case of Caribbean countries, the academic calendar begins in September of each year, so school closures affected the 2020 cohort only for a few months. In fact, data available for the primary level predate 2020 school closures.³⁰ It is for this reason that the analysis of 2021 and 2022 data is of paramount importance to assess the true impact of the pandemic on children and adolescents' learning in Jamaica and Barbados. Finally, for both countries, the change in the sample from year to year makes causal analysis difficult in terms of the effects of the pandemic on student learning.

30. En 2020, el test de habilidades se tomó en el mes de febrero. Ver: <http://digjamaica.com/>.





Conclusions

Drawing on official data from learning assessments and household surveys, this chapter presents an initial outline of **learning loss and engagement outcomes for LAC students in the first year of the pandemic**. Considering the background of inequality, lower attendance in upper secondary and tertiary education, and subpar results in standardized mathematics and language tests in the region, already present in pre-pandemic times, it is necessary to highlight the enormous complexity and challenges faced by education today in the Latin American and Caribbean region.

a) Serious present and future academic effects. The data indicate the existence of serious current and future academic effects that follow from the combination of (1) a drop in the number of hours students dedicated to study during the pandemic; and (2) the high percentage of students who did not stay connected with school due to technological restrictions and who had fewer interactions with peers and teachers during 2020. In addition to the learning lags that this implies in the short term, the evidence for the case of Mexico suggests that this may generate considerable impacts on school permanence in the near future.

(b) Lower-than-expected drop in registrations. Although school dropout was observed during 2020 to some degree and for some specific age groups, data show no significant generalized drop in enrollment in the countries analyzed. That is to say, the pandemic appears to have generated visible effects, but not of the anticipated dimensions, on school attendance as a whole.

(c) Young people who are neither studying nor gainfully employed on the rise. The number of young people who are neither studying nor gainfully employed grew significantly, although it stabilized downward in the last months of the year.

One possible interpretation of the failure to observe a more significant exit from the education system is that the population remained enrolled in the context of a pandemic and remote education does not necessarily imply that they continued with learning activities. In fact, given the closure of the schools and of the Ministries of Education themselves, it was not feasible for students to process their withdrawal from school if they wished to do so. This was so for two reasons—first, because of the

cost in terms of time and paperwork that it could entail, and second, because authorities commonly resorted to a policy of “automatic passing” or “nonrepetition of grades,” without the need to take exams or evaluations that involved a particular effort.

One possible interpretation of the failure to observe a more significant exit from the education system is that **the population remained enrolled in the context of a pandemic and remote education does not necessarily imply that they continued with learning activities.** In fact, given the closure of the schools and of the Ministries of Education themselves, it was not feasible for students to process their withdrawal from school if they wished to do so. This was so for two reasons—first, because of the cost in terms of time and paperwork that it could entail, and second, because authorities commonly resorted to a policy of “automatic passing” or “nonrepetition of grades,” without the need to take exams or evaluations that involved a particular effort.



“The analysis yields highly worrying results from the point of view of equity and the role that education plays as a mechanism for equal opportunities.”

In addition, the analysis yields **deeply worrying results with regard to inequalities, and the role that education plays as a mechanism for generating equal opportunities,** since, although we witnessed no generalized exits from education systems, some specific groups were more affected. For example, we see considerable differences when we compare the results on school drop out for students residing in households whose head lost his or her job during the pandemic with those for students living in a household that managed to maintain job stability.

Along the same line, **for students in lower socioeconomic groups,** in rural areas, and enrolled in public schools, the results indicated **larger falloffs in the number of hours dedicated to study as well as connectivity restrictions and lower quality interaction with teachers during the pandemic.** It is expected, therefore, that learning gaps along the income distribution have widened. We also note marked differences by gender in the numbers of young people who neither study nor work, due to women’s slower return to the labor market, which is very likely associated with growing demands placed on their time for domestic activities and care of household members.

It is important to note that the information available for this analysis covers the year 2020, which, depending on the school calendar followed by the different countries, was affected at the end of the 2019–2020 school year or through the entire 2020 school year. Therefore,

the present study manages to document only the short-term effects of school closures on a few variables. It is possible, for example, that in the school cycles beginning in 2021, the consequences of the previous loss of learning may begin to materialize (e.g., greater school dropout) or the school dynamics themselves may be modified (e.g., school systems could make changes to the nonrepetition or automatic pass policies).

To date, the results of the analysis regarding the two primary areas of interest—learning and engagement—provide evidence of possible impacts of the pandemic on education. **In terms of learning, evidence calls into question the performance of the testing itself, which makes it difficult to study learning losses at the current juncture.** Social-distancing measures implied the suspension of national assessments in countries such as Mexico, Brazil, and Peru, and we witnessed a drop in the participation of students belonging to certain population subgroups, such as vulnerable families, as in Colombia and Barbados, or students from the highest income deciles, as in Jamaica. The content of the evaluations also had to be reformulated and shortened, which makes it difficult to compare these results with the results of previous years. Although the challenges in comparability and the scant learning data still available in the region are noteworthy, in São Paulo, where the tests maintained their high percentage of implementation, the negative effects on learning were significantly concentrated in the traditionally more vulnerable population subgroups: women, non-white students, and students from vulnerable sectors with a greater digital education gap.

In terms of students' engagement with educational institutions, the results are intertwined with those on inequality and the evidence of possible learning loss in Latin America during the pandemic. Although student dropout did not occur at the magnitude expected and predicted in studies and simulations, responses to the household surveys' questions about education showed that students, although formally enrolled in schools, were often disconnected from their school activities during the school closures, dedicating fewer hours to studies and, in some cases, not interacting at all with teachers.

The quantity and quality of student engagement with school were severely limited during the pandemic, and as a result significant losses in learning opportunities and educational outcomes are to be expected. This is especially true for the most vulnerable students: the poorest and rural students. Therefore, a proactive learning recovery policy focused on those most affected by the pandemic is necessary for an effective return to face-to-face schooling.

The chapter documented the adverse effects of the pandemic on the lives of students in Latin America and the Caribbean. Those effects include learning loss, decreasing levels of engagement from school, widening gaps in access to quality education, growing risk of dropout, and declining mental health. The evidence shows the imperative need to design effective public policies and interventions to mitigate such effects and set students on the path to academic recovery and improvement. We offer guidance on such policies in the next chapter of the report in the form of concrete proposals to improve the lives of students in the region by improving academic performance and narrowing gaps.



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Appendices

A.1 – Remote/Distance Education Questions in Household Surveys

The household surveys include a question on attendance to an educational institution with minimal variation in wording across countries that asks whether the person “currently attends or attended any educational establishment (college, school, university).” This question is found in all household surveys reviewed and did not change due to the pandemic. The question considers “attendance” as enrollment in an institution and not necessarily as actual attendance to school (whether due to vacations, strikes, stoppage, nonstart of the academic year, etc.).³¹

The reformulation of some forms in the region to introduce the COVID-19 modules, which asked additional questions relating to the pandemic and the treatment of different social issues in the region, did not change the educational questions that the surveys were designed to ask. Only additional questions about the study modality or certain clarifications about those modalities were added in the collection manuals.

Education Platforms and Interaction with Teachers

In Peru, Bolivia, and Argentina, the surveys specifically inquire about the use of virtual educational platforms, but only in Peru and Argentina is that information supplemented with a question about whether there was real-time interaction with teachers. In all three countries, the option of educational platforms is separated from other virtual media such as email, social networks, or WhatsApp and SMS messages.

The quality of distance education is also evidenced by the simultaneous interaction of students with their teachers through means of communication that allow real-time resolution of students’ questions. In Peru and Argentina, the surveys clarify whether student-teacher communication in real time in a distance modality is conducted by video call in virtual meeting applications (e.g., Zoom, Teams, Jitsi, Meet).

³¹. For more detail on education questions and education platforms in the Latin American household surveys, please see Acevedo et al. (2022).

Learning Loss Literature Review Table

Source	Country	Closure length	Education level	Subject	Learning loss	Equality impact	Sample size
Maldonado and De Witte (2020)	Belgium	9 weeks	Primary, grade 6	Math	0.19 SD	Yes	Not specified
				Dutch	0.29 SD	Yes	Not specified
				Social science	Insignificant	Not specified	Not specified
Engzell, Frey, and Verhagen (2021)	The Netherlands	8 weeks	Primary (age 8)	Math	0.063 SD	Not specified	92,180 students
			Primary (age 8)	Reading	0.05725 SD	Not specified	76,397 students
			Primary (age 8)	Spelling	0.09375 SD	Not specified	90,403 students
			Primary (age 9)	Math	0.07325 SD	Not specified	93,417 students
			Primary (age 9)	Reading	0.0975 SD	Not specified	79,016 students
			Primary (age 9)	Spelling	0.07075 SD	Not specified	91,567 students
			Primary (age 10)	Math	0.0935 SD	Not specified	93,769 students
			Primary (age 10)	Reading	0.08425 SD	Not specified	68,412 students
			Primary (age 10)	Spelling	0.0755 SD	Not specified	91,315 students
			Primary (age 11)	Math	0.05025 SD	Not specified	73,263 students
			Primary (age 11)	Reading	0.07425 SD	Not specified	48,537 students
			Primary (age 11)	Spelling	0.07575 SD	Not specified	69,841 students
Tomasik, Helbling, and Moser (2020)	Switzerland	8 weeks	Primary (grade 3–6)	Math, German	0.20 SD	Not specified	13,134 students
			Secondary (grade 7–9)	Math, German	Insignificant	Not specified	15,551 students
Gonzalez et al. (2020)	Spain	10 weeks	Higher education	Applied computing, metabolism, design of water-treatment facilities	Improved	Not specified	458 students
Orlov et al. (2020)	USA	3.5 weeks	Higher education	Economics	0,185 SD	No	4 universities
Kuhfeld, Tarasawa, Johnson, Ruzek, and Lewis (2020)	USA	Not specified	Primary (grade 3–8)	Math	5–10 percentile points	Inconclusive	4.4 million students
			Primary (grade 3–8)	Reading	Insignificant	Inconclusive	4.4 million students



Gore et al. (2021)	Australia	8-10 weeks	Primary (year 3, all schools)	Math	Insignificant		1,427 students
			Primary (year 3, low ICSEA schools)	Math	2 months less growth		334 students
			Primary (year 3, mid ICSEA schools)	Math	Improved, two months additional growth		813 students
			Primary (year 3)	Reading	Insignificant		1,429 students
			Primary (year 4)	Math	Insignificant		1,498 students
			Primary (year 4)	Reading	Insignificant		1,515 students
			Primary (year 3-4)	Math and reading	Insignificant		3,030 students
Schult, Mahler, Fauth, & Lindner (2021)	Germany	8.5 weeks	Primary (grade 5)	Math	0.09 SD	Yes	80,000 students
					0.03 SD	Yes	80,000 students
				Reading	0.07 SD	Yes	80,000 students
Yarrow, Masood y Afkar (2020)	Indonesia	4 months	Secondary (age 15)	Reading (PISA)	11 points	Yes	Not specified
de Hoyos (2020)	Mexico	2 months	Primary and secondary (grade 3 and 11)	Math and reading (ENLACE)	0.24 SD	Not specified	Not specified
Cerdán et al. (2020)	Colombia	9 months	Primary and secondary (Grade 3, 5, 9, and 11)	ICFES	75% of a year of learning	Not specified	Not specified
Ministry of Education, Study Center, 2020	Chile	6 months	Not specified	SIMCE	15% to 50% or a year of learning	Yes	Not specified
Lichand et al. (2021)	Brazil	9 months	Primary and secondary (Grade 6-12)	Math and Portuguese	0.32 SD	Yes	7,097,042 students

Source: Table modified from the academic study by Donnelly and Patrinos (2021).



Chapter 3

The Consequences of Inaction

Authors



Cecilia Berlanga Alessio Robles
Vicente García Moreno
Alejandro Morduchowicz
Francisco Javier Valverde Rodríguez
Marta Ruiz

Investing in education must be part of the health crisis response and recovery strategy.

The costs of not investing in education adequately and in a timely manner are high and very diverse. The consequences may not be evident in the short term, but they will have an impact on the quality of life of future generations. The closure of schools jeopardized the progress achieved in access to an equitable and quality education in the region. In addition, experience shows that learning loss in school-age individuals has an impact on their subsequent labor market insertion and, therefore, on their income. If we fail to act, there will be adverse impacts on income distribution and intergenerational mobility in our countries. This section will analyze various scenarios that could occur if action is not taken to correct the current course of education. It will cover possible consequences in terms of income, social mobility, health, incidence of crime and violence, and political and civic participation, among others.

"The costs of not investing in education adequately and in a timely manner are high and very diverse. The consequences may not be evident in the short term, but they will have an impact on the quality of life of future generations. "

Any interruption of schooling, whether temporary or permanent, can have an impact on a person's learning and productive capacity. This is because schooling also makes it possible to learn the skills that drive labor productivity. The development of a country's human capital, based on schooling and knowledge acquisition, is crucial for its long-term development and poverty reduction. In addition to having an impact on the economy, schooling influences personal and social well-being. In short, it is related to a better quality of life.

This section first presents a review of the literature on the relationship between learning and economic returns, intergenerational social mobility, health, incidence of criminal and violent activities, and political and civic participation. It explores the consequences of school closures due to the COVID-19 pandemic in terms of the economic effects of learning loss and school dropout and the impact on mental health.

The second part of this section includes an estimate of labor losses from the educational impact of COVID-19 in Argentina, Chile, Colombia, Costa Rica, and Mexico. For this purpose, a methodology was used to estimate working-life wages for the cohort ages 6 to 18 in 2020. From this base calculation, wage losses caused by the reduction in educational returns due to learning loss were estimated according to working-life earnings per cohort (Morduchowicz and García Moreno 2021). This section includes a review of the material, epidemiological, and institutional conditions under which education in the region developed during the pandemic and the closure of face-to-face activities, the characteristics of distance classes, and the pre-pandemic learning context. It describes the methodology used for the model and the calculations, and the presentation and development of the results of the loss calculations. The section concludes with an estimation of the possible consequences of inaction in Latin America, analyzing the impact of past epidemics on school attendance, inequality, and internal conflicts in the period from 2001 to 2018.



What the studies say: literature review

The COVID-19 pandemic has had an impact on all areas of life in Latin America, from health to the economy and social environment. These impacts have directly and indirectly affected education; that is, in addition to causing school closures, the pandemic has had consequences on educational supply and demand. These effects will be visible in both the short and long term, through the diminishing benefits (economic and social) of investment in education.



Learning and economic returns

Loss of learning, cognitive skills, and educational trajectory throughout life leads to a wide variety of consequences. One of the most far-reaching in the long run is the cost in individual income and prospects for a country's growth and productivity.

The literature studying the relationship between human capital and economic growth points to education as a productivity enhancer. In turn, countries with higher income levels tend to have productive sectors that use more sophisticated technology, which requires a more educated and specialized workforce. Thus, there is a bidirectional relationship between human capital accumulation and economic growth (Sianesi and Van Reen 2003).





Multiple studies agree that primary education yields the highest social returns worldwide, although recent studies also show a resurgence in returns of tertiary education that, in some cases, are higher than those of primary education (Psacharopoulos and Patrinos 2018). These analyses also show that women and countries with the lowest per capita incomes benefit the most from educational investment. According to Psacharopoulos and Patrinos (2018), the average private economic return for each additional year of schooling (i.e., the annual return on investment for an individual) is 9 percent; each additional year can increase individual income by about 7 percent (Card 2001). An analysis by Hanushek and Woessmann (2012) explores the reasons why Latin America has had lower economic growth since 1960 than other regions. This study shows that, once school performance is included as a variable, human capital can explain between half and two-thirds of the difference in income between Latin America and the rest of the world. Furthermore, research by Lopez Boo (2010) shows that, after the 1995 and 2001 crises in Argentina, as the stock of human capital increased, the negative impact on wages decreased.

Moreover, as a country's human capital increases, the easier it will be to adopt new technologies and the faster technologies will progress. This correlation has an impact on a country's growth and productivity (Barro 2001; Hanushek and Woessmann 2012). Seen from another perspective, a higher rate of innovation is found in economies with more developed human capital, which, in turn, has a direct effect on a society's productivity growth rate (Sianesi and Van Reen 2003). Hanushek and Woessmann (2012a) show this through an analysis based on the results of international science and math assessments for 13 OECD countries. This analysis suggests that a one standard deviation increase in assessment scores is associated with a growth of about two percentage points in annual GDP per capita (Sianesi and Van Reen 2003).



According to other analyses by Hanushek and Woessmann (2007), each year of schooling is associated with a long-term growth of GDP by 0.58 percentage points and with an increase in personal income of between 7.5 percent and 10 percent (Hanushek and Woessmann 2020). For the authors, the most important factor related to the distribution of individual income is the cognitive skills acquired through schooling. Thus, the quality of education, which can be measured by assessments of cognitive skills, has a greater impact on economic growth than the amount of educational instruction a person receives.

The non-monetary benefits of education

The effects of education extend beyond the economic sphere. **Invertir en educación también deriva en diferentes beneficios sociales como el incremento de la movilidad social, las condiciones de salud y bienestar de un individuo y su familia, la disminución de la probabilidad de incidencia en actividades criminales y violentas, y la participación política y ciudadana y el crecimiento de la cohesión y el capital social.** In general, educated people are better positioned to know and invoke their rights, because they're better able to access information, make informed decisions, collaborate with others in pursuit of collective objectives, demand accountability, and participate actively as citizens (Robeyns 2007). Likewise, having a certain level of education can make people more resilient and, therefore, less vulnerable to cyclical changes in the labor market. Education is essential to achieving personal autonomy, which is a necessary condition for exercising civil and political rights. All these benefits of education result in external social impacts that, in turn, can have indirect economic effects and foster economic and social development.

"Investing in education also derives in different social benefits related to social mobility, health, a decrease in criminal activities and political and citizen participation."



i) Intergenerational social mobility

Family characteristics, socioeconomic status, educational level, and parental networks are associated with an individual's educational outcomes—that is, with school performance and educational aspirations (Breen and Jonsson 2005). This suggests that the educational trajectory of one generation can permeate subsequent generations and have an impact on their social mobility. This is called the equalizing effect of education, which is also subject to factors such as the labor market situation and its occupational structure. Thus, there is an association between mobility and income: in high- and upper-middle-income countries, the possibility of moving up in the socioeconomic structure is twice as high as in low-income countries (Leone 2019).

Some authors argue that the most significant determinant of educational attainment is the family environment, especially the educational level of the mother. Women's education is associated with a lower fertility rate, since the more years a girl spends in school, the lower are her chances of getting married and/or having a child, thus decreasing some of her health risks (Cutler and Lleras-Muney 2012). Lower fertility is related to a lower population growth rate, which broadens the possibility for families to invest more in better-quality education for their children. This, in turn, permeates future generations (Sianesi and Van Reen 2003).

At least 50 percent of the variability in people's lifetime earnings results from attributes that are acquired up to age 18. The family environment during the early years and parenting style are critical determinants of human development because they shape the foundation of lifelong skills (Heckman and Mosso 2014). Experiences and predispositions in stages prior to adulthood, such as the values that parents transmit to their children and parents' occupation and income have an important influence on whether adults aspire to higher educational levels (Kam and Palmer 2008).



ii) Health conditions

There is also a correlation between a person's education and both individual and family health status. This is because, although biology plays a role in determining an individual's health, personal behaviors and choices can put biological health at risk. Education has the potential to reduce morbidity and mortality by influencing behavioral change and beliefs. It may also encourage appropriate use of health services and general awareness of health issues (Feinstein et al. 2006).

At the beginning of their lives, the health status of individuals is linked to the resources of their parents. If parents have resources such as social networks (defined as a set of people with certain relationships), knowledge, and financial resources, they are more likely to invest in their children's health and education. Health indicators in early life, such as height, which can be affected by disease and malnutrition, have an important correlation with educational attainment. So certain health impacts early in life can have a negative effect on human capital formation (Cutler and Lleras-Muney 2012).

A study by Raghupathi and Raghupathi (2020) using data from 26 countries between 1995 and 2015 identified patterns between education and health indicators. Their results indicate that adults with higher levels of educational attainment tend to have longer life expectancy compared with their less educated peers. In addition, the study notes that tertiary education is linked to lower infant mortality rates, higher rates of child enrollment and vaccination, fewer health risk behaviors, and healthier lifestyle habits.



A study by Goldman and Smith (2011) indicates that there is a prevalent relationship between educational levels and health risk behaviors such as smoking, excessive alcohol consumption, poor eating habits, and lack of physical exercise. These behaviors play an important role in the incidence of cardiovascular disease, diseases affecting the lungs, diabetes, and hypertension. The authors suggest that it is easier for more educated individuals to benefit from advances in medical knowledge by adopting healthier behaviors and investing in their own and their family's health (Goldman and Smith 2011).



Chevalier and Feinstein (2006) conducted a study in which they analyzed, in monetary terms, the benefit of education in reducing the incidence of depression in adults in the United Kingdom. The study showed that an increase in the educational level of women (holding a technical certificate) led to a reduction in the risk of falling into depression from 26 percent to 22 percent. According to their calculations and considering that the population of adult women with depression represents 17 percent of the total population in that country, education would reduce the total annual public cost of depression by about £200 million (Chevalier and Feinstein 2006).

Sabates and Feinstein (2006) estimated the impact of adult education on cervical cancer prevention by studying the effects of preventive cervical screening in 100,000 women enrolled in adult education in the United Kingdom. The results suggest that between 116 and 134 cases of cancer were prevented per 100,000 women enrolled.

A study by Currie and Moretti (2002) shows that, for women in the United States, enrolling in higher education and remaining enrolled for at least two years decreases their likelihood of smoking during pregnancy by 5.8 percentage points. This in turn decreases the likelihood that their children will have a low birth weight. According to Spasojevic (2010), an additional year of schooling in Sweden increases a man's probability of having a body mass index in a healthy range by 12 percentage points.



iii) Incidence of criminal and violent activities

The relationship between education levels and violence and the incidence of criminal activity has recently gained interest, as it has been found that policies designed to increase educational attainment and quality can reduce crime rates. There is a negative correlation between income and crime when considering income as a metric of the opportunity cost of engaging in criminal activity. Violent and property crimes are usually committed by young men without formal education. A low educational level decreases the possibility of getting a higher salary, reducing the opportunity cost of engaging in criminal activities (Lochner 2004).

According to Hjalmarsson and Lochner (2012), education can promote patience, as attending school is considered an exercise in gratification deferral; patience, in turn, makes individuals more risk averse (Cutler and Lleras-Muney 2012). These individual characteristics tend to directly affect decisions about schooling and participation in criminal activities. Based on U.S. Census data, the authors estimate that an additional year of schooling reduces the prevalence of violent and property crime by 11–12 percent (Hjalmarsson and Lochner 2012). Specifically, an additional year of schooling can reduce the incidence of homicides and assaults by approximately 30 percent, vehicle theft by 20 percent, and general theft by 6 percent. Furthermore, according to the authors' calculations, an additional year of schooling reduces the incarceration rate of men between ages 20 and 60 by 10–15 percent (Hjalmarsson and Lochner 2012).



iv) Political and civic participation

Higher levels of schooling contribute to higher rates of civic and social participation.

Therefore, the school system is often seen as the main agent of socialization in modern societies (Desjardins and Schuller 2006). The literature on the relationship between education and civic and social participation refers to seven dimensions of participation (Campbell 2006): political participation, defined as efforts to influence public policy (e.g., working in political campaigns); civic participation, defined as collective public activity with no intention of influencing public policy (e.g., belonging to voluntary associations); voting in public elections; interpersonal trust, which is central to the concepts of social capital and social cohesion; trust in government institutions; tolerance, which refers to a person's willingness to extend civil liberties to minority or unpopular groups; and political knowledge about democratic institutions and processes. All these dimensions are fundamental elements for the proper functioning of a democratic society.

A study by Dee (2004) found that entry into postsecondary educational institutions among U.S. youth has a positive effect on electoral participation. Continuing formal education beyond the secondary level increases the probability of registering to vote by 22 percent and of voting by 17 percent (Dee, 2004). In addition, individuals who grow up in an environment where civic responsibility is important are more likely to stay in school. The author also finds that high school graduation has a positive effect on newspaper reading among young people, which is related to political literacy. The study concludes that more schooling correlates with greater tolerance for social differences and support for freedom of expression, which are key to a democratic society. This correlation is often explained by the relationship between cognitive ability—enhanced by education—and tolerance, which requires a certain level of abstract thinking (Campbell 2006).

Although Dee's study (2004) is consistent with educational levels regardless of age, the situation in Latin America is somewhat different. Although educational coverage has made great progress in the region in recent years, it has been observed that the generations of adults over age 61 with lower levels of schooling are more supportive of democracy than groups of young people under age 25 (Latinobarómetro 2021). On the other hand, in Latin America, according to the results of the report "The Pulse of Democracy," the level of education is the strongest predictor of political tolerance: the average level of political tolerance for people with the highest level of education (without taking into account their age) is 56.7 points, while the average for people with the lowest level of education is 46.5 points (Zechmeister and Lupu 2019).



Feinstein and Hammond (2004) and Feinstein and others (2003) studied the relationship between adult education and civic and political participation, finding that adult education leads to increased electoral participation, membership in voluntary associations, and racial tolerance. This in turn leads to a decrease in authoritarian attitudes. Education expands a person's ability to acquire information about how government works, history, geography, and economics, and this can enable an intention to influence public policy (Campbell 2006). In addition, a curriculum that includes civic education and civic skills development has a high probability of influencing an individual's civic and political participation—for example, through active citizenship.

Political participation is also related to parental characteristics, such as educational level, occupation, and income. Parents influence their children's political and civic participation as adults through the transmission of values. Either directly or indirectly, parents can transmit their basic stances on life to their children by example (e.g., by getting involved in political activities). Better educated parents are more likely to be active participants in political life (Kam and Palmer 2008).

Other agents, such as peers, schools, and neighborhoods also have an important influence on an adult's political and civic participation, as they can push individuals to aspire to a higher educational level and, consequently, to become more politically active (Kam and Palmer 2008). This is one of the reasons why socialization in stages prior to adulthood is of utmost importance.



School disruption and learning loss

There have been numerous cases in recent history in which the school-age population has had to suspend school attendance due to natural phenomena, epidemics, teacher strikes, or wars and conflicts (Goodman 2014; Jaume and Willén 2019; Marcotte and Hemelt 2008; Justino 2011). This background illustrates some of the consequences of interrupted school trajectories. When a person stops attending school, the loss of continuity in the learning process and the possibility of acquiring the knowledge programmed in the school period will have lifelong impacts on educational attainment. The literature on so-called “summer loss” refers to the disruption of classes due to school transitions from one cycle to another and shows that students’ skills decline during summer breaks (Cooper et al. 2000; Alexander, Entwisle, and Olson 2007; Downey, von Hippel, and Broh 2004). This effect is more pronounced among students of lower socioeconomic status, as those with higher incomes tend to attend summer classes and tutoring outside of school, which makes their school transitions more bearable (Borman, Benson, and Overman 2005). Prolonged school closures can also lead to students dropping out—in the worst-case scenario, permanently.

Woessmann (2003) estimated that a 10 percent reduction in educational instruction decreases the standard deviation of learning by 1.5 percent. Marcotte and Hemelt (2008) estimated that, in school cycles with an average of five unscheduled closures, the performance of third graders on state tests in Maryland, United States, was almost 3 percent lower than in school cycles without school closures. In Sao Paulo, Brazil, a study showed that the closure of schools for three weeks because of the H1N1 flu outbreak resulted in a decrease in math scores and most severely affected the schools with the worst results in the national evaluation system (Amorim, Piza, and Lautharte Junior 2020). Furthermore, a study conducted in Argentina showed that the loss of 88 school days due to teacher protests resulted in a 3 percent decrease in students’ salaries when they reached an age between 30 and 40 years old (Jaume and Willén 2019).

School interruption also has consequences in terms of social mobility. According to Jang and Yum (2020), closing schools for one year would reduce the likelihood that children belonging to families in the lowest income quintile would move to the highest income quintile by 2–3 percent. This effect is more severe the older the children are, as their opportunity cost of returning to school is higher than that of younger ones. In general, the older the students are, the higher their opportunity cost of staying in or returning to school, especially in poor households where the cost of sending older children to school is even higher (Azevedo et al. 2020). In Mexico, Blanco (2014a; 2014b) finds inequalities in the effects of school interruption, specifically in the probability of returning to the school system once education has been interrupted: youth from higher social strata are up to three times more likely to return than those from lower strata. According to the findings, only 27 percent of young people on average return to the school system after dropping out.

The closing of schools not only generates a discontinuity in learning but also, in many cases, a suspension of other services, such as school feeding programs and psychological and social support for students. The literature shows that school meals increase performance in reading and math (Chakraborty and Jayaraman 2019), so their suspension may also reinforce the effect of school closure on learning loss.





The consequences of school closures due to the COVID-19 pandemic

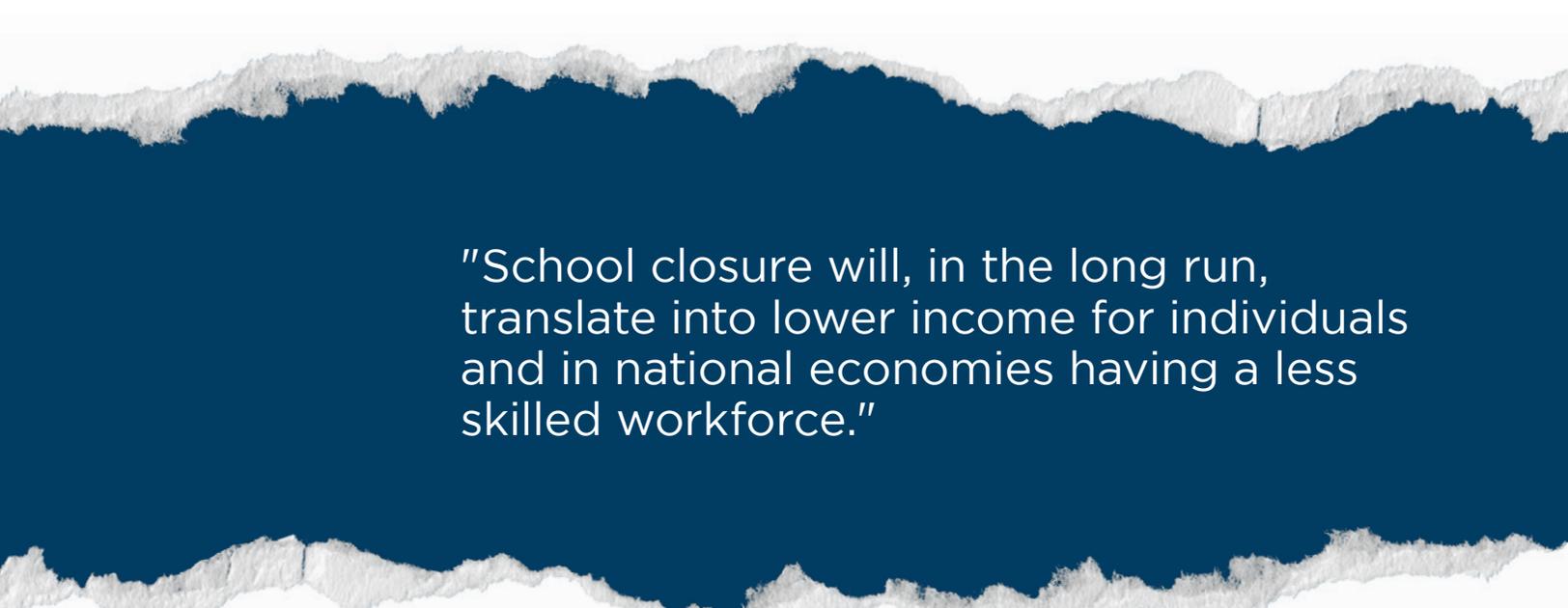
The COVID-19 pandemic brought into focus the risks and long-term consequences of prolonged school closures. When face-to-face classes were suspended, education systems in the region resorted to various remote learning modalities, but these alternatives were conditioned by the socioeconomic restrictions of the student body, the deficient and insufficient policies adopted by governments, and the prolonged closures of schools—leaving some of the population on the sidelines. In the wake of this crisis, a variety of studies have emerged estimating the effects of the suspension on learning, wages, and well-being. All point to the need for an equitable and efficient allocation of resources to avoid a high-cost scenario in the long term.



i) The economic effects of learning loss

The pandemic will have direct and indirect effects on classroom learning: in addition to the direct effects on the learning process of students, the economic effects on families, the greater economy, and public spending on education will have an impact on educational demand and supply in Latin American countries.

Some studies on educational demand, economic crises or shocks, and school dropout show the significant impacts that school closures have on deepening inequality in educational attainment and intergenerational mobility. By diminishing the potential for the benefits of education through lack and loss of learning, school closure will, in the long run, translate into lower income for individuals and in national economies having a less skilled workforce (Hanushek and Woessmann 2020).



"School closure will, in the long run, translate into lower income for individuals and in national economies having a less skilled workforce."

Patrinos and Donnelly (2021) conducted a systematic review of eight articles, published between March 2020 and March 2021, that quantify learning loss using direct measurements, mainly in Europe and the United States. They find that the loss due to closure periods of between 3.5 and 10 weeks is between 0.05 and 0.19 standard deviations in math and between 0.05 and 0.29 in reading. They also found consistently that the greatest negative effects occur in the lower grades of primary education, where the most significant learning for the rest of school life occurs.

Kaffenberger (2021) estimates that learning loss, which he estimates at up to one year in the long term for three-month closures, can be reduced by as much as half if the necessary mitigation measures are taken—and even to zero, if long-term adjustments are made to the curriculum to account for the learning deficiencies of cohorts affected by closures.



Azevedo and colleagues (2020) estimate that, globally, the educational crisis caused by the pandemic could result in a loss of between 0.3 and 0.9 quality-adjusted years of schooling. In the most pessimistic scenario, this could translate into a loss of US\$1,408 in annual income per person, which is equivalent to 8 percent of a person's lifetime labor income (Azevedo et al. 2020). In a scenario where resources are not directed to the economically most disadvantaged students, income losses will be much greater for those whose families are less able to support them in their remote learning process. This would exacerbate pre-pandemic economic gaps and low levels of educational attainment (Chetty et al. 2020).

Undoubtedly, **the most affected are the youngest children and those with parents or caregivers at low educational and socioeconomic levels:** the former because the first years of a person's life are decisive for the formation of human capital (inputs they receive as children will define the skills acquired at later stages) and the latter because parents with more education and resources are more likely to invest time and resources in the educational process of their children outside school (Fuchs-Schundeln et al. 2020). The crisis is deepened by the dynamics of care and educational accompaniment derived from distance education and home-schooling activities: there is evidence that the pandemic caused a reduction of up to half in the time that children devoted each day to educational activities (Hanushek and Woessman 2020). Likewise, the time dedicated by parents to supporting their children's educational activities is highly correlated with their own schooling and income. These tasks are unequally distributed in terms of gender, with mothers dedicating a disproportionately greater amount of time to educational accompaniment tasks (Morduchowicz and García Moreno 2021).

A study by Neidhöfer, Lustig, and Tommasi (2020) estimates the potential effects of the health crisis on learning loss and intergenerational persistence of education in 17 Latin American countries. According to the study, for individuals whose parents completed at least secondary education, the learning loss will be around 10 percent, while for individuals from poorer educational backgrounds, the loss will be around 60 percent. Likewise, the high-school completion rate for students with parents with low educational levels could decrease by 20 percent, thus affecting educational upward mobility. These data are worrying because this learning loss could reverse decades of regional progress in social mobility driven by educational attainment.

For their part, Psacharopoulos and colleagues (2021) estimated that the closure of primary and secondary schools in 157 countries would result in a loss of 2.5 percent of future wages over the productive lifetimes of current students, and that the total cost to the world economy would represent 18 percent of current global GDP. In the case of Latin America and the Caribbean, the World Bank estimates that closing schools for ten months could translate into a loss of up to US\$1.7 billion because of learning losses that would prevent students from developing skills and competencies considered basic in several countries (World Bank 2021).



A study by IDB and the Center for Educational and Social Studies (CID and CEES 2021) estimated the future costs of lost income for some countries in the region based on information generated by the Program for the International Assessment of Adult Competencies. With the information available for Chile, Ecuador, Mexico, and Peru regarding the loss of literacy and numeracy skills, this study estimates that these costs are in the range of 4.4 to 5.5 points of GDP in Chile, 2 to 2.1 points in Mexico and 1.7 to 3 points in Ecuador.

Latin America may be the region with the highest absolute growth in the “learning poverty” indicator, which measures the proportion of students who are not able to read and understand a simple text at the end of primary school. Currently this indicator is 51 percent; it is estimated that, with an average suspension of 70 percent of the school year due to the pandemic, it will increase to 62.5 percent. This is equivalent to two out of every three students, totaling 7.6 million, and translates into 71 percent of high-school students potentially falling below the minimum performance level of the PISA tests (World Bank 2021).

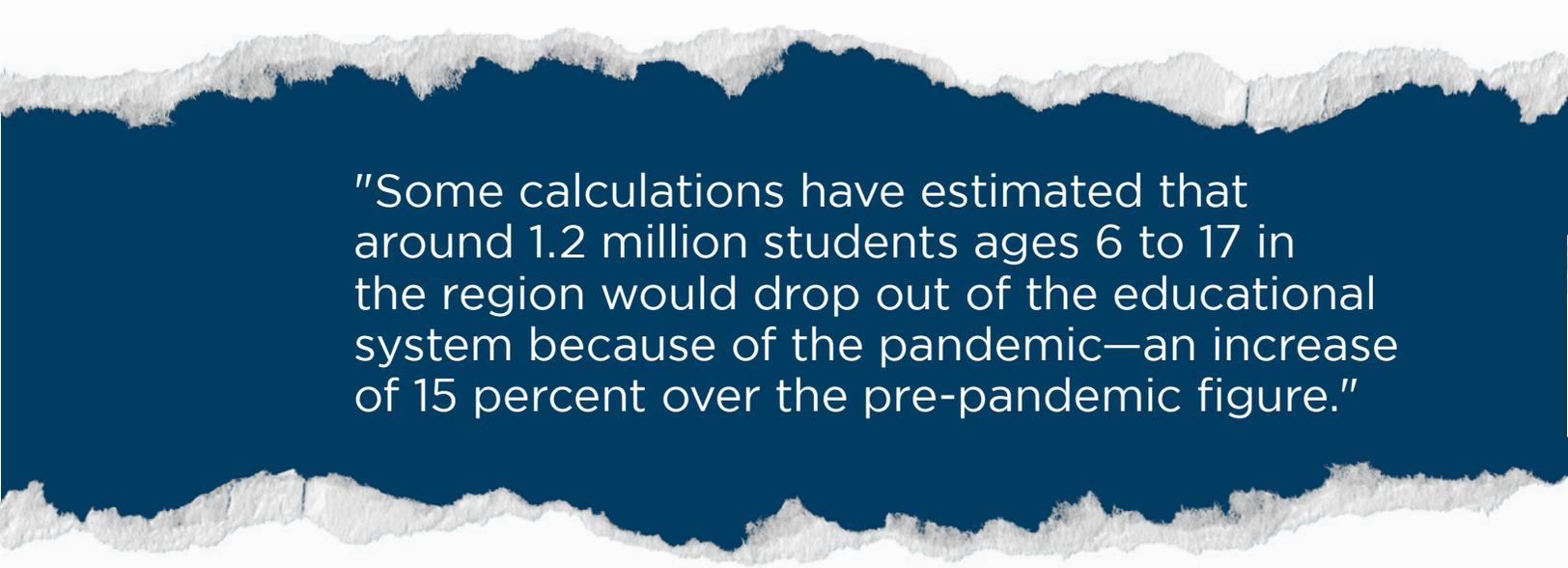
According to estimates for Mexico, the loss of 60 effective school days for a generation, which is equivalent to one school year, corresponds to a reduction of 24 points in basic learning in sixth grade as measured by standardized tests. This would reduce the lower secondary graduation rate by 2.5 percentage points, and the higher secondary graduation rate by 3 percentage points for this same generation (De Hoyos 2020). Morduchowicz and García Moreno (2021) estimated several scenarios of the long-term economic effect of learning loss from school closures during the 2019–2020 school year. Their estimates indicate that a student in basic education (primary and secondary) could lose on average 3.7 percent of future total salary—10.6 percent if half of the 2020–2021 school year is lost too. When adding the losses for the 2019–2020 school cycle, estimates indicate that the Mexican economy would lose the equivalent of 16.6 percent of a year’s GDP during the working life of this generation (Morduchowicz and García Moreno 2021). These figures are consistent with those of Psacharopoulos and colleagues (2021) mentioned above.

According to IDB and UNICEF estimates, pre-primary school closures during 2020 could cost US\$1.6 trillion in lost lifetime income for children (Nugroho et al. 2021). This is because the closure of preschools deprives children of opportunities for cognitive stimulation and socio-emotional development outside their homes, which are fundamental to preparing them for future learning cycles. Estimated losses from pre-primary school closures vary considerably by country, depending on what pre-primary school enrollment was prior to the pandemic. Lopez Boo, Behrman, and Vázquez (2020) estimate that upper-middle-income countries would have a loss of about 3.38 percent of GDP, and lower-middle-income countries would lose 2.66 percent.



ii) School dropout

Dropping out of school is one of the most serious long-term consequences of the pandemic. During the health crisis, the number of young people neither studying nor working in the region increased considerably. Acevedo and colleagues (2020) estimated that the number of young people in these conditions will rise by 21 percent in the region to 2.7 million. The countries with the largest increases are Bolivia (52 percent), Peru (51 percent), and Ecuador (42 percent) (Acevedo et al. 2020). In addition, many private schools will be forced to close, leading to increased dropout rates and migration to the public sector. During 2020, the region's real GDP contracted by 8 percent, mainly due to the COVID-19 pandemic and its consequences (prolonged national confinements and the decline of tourism and economic activities) (United Nations 2021). The reduction of productive activities can have an impact on school attendance in various ways: for example, the inability to cover expenses for educational materials and transportation, the need to work to cover household expenses, and the reduction of incentives to continue studying associated with the drop in educational returns. Some calculations have estimated that around 1.2 million students ages 6 to 17 in the region would drop out of the educational system because of the pandemic—an increase of 15 percent over the pre-pandemic figure (Acevedo et al. 2020). Globally, it is estimated that around 7 million students will drop out of school, which is equivalent to 0.5 percent of students worldwide (Acevedo et al. 2020).



"Some calculations have estimated that around 1.2 million students ages 6 to 17 in the region would drop out of the educational system because of the pandemic—an increase of 15 percent over the pre-pandemic figure."

In the case of girls and female adolescents, one of the important causes of school dropout is early pregnancy. According to some estimates, the measures taken to contain the pandemic (for example, the concentration of public health resources on containing COVID-19) could represent a five-year setback in reducing the adolescent fertility rate in Latin America and the Caribbean (CEPAL and UNFPA 2020). This would mean an increase from 61 to 65 births per 1,000 adolescents ages 15 to 19. However, high-income countries have seen a decline in fertility rates (Aassave et al. 2021).

School plays a central role in the prevention of child and adolescent pregnancy: in addition to educating, it provides a safe place for the physical, psychological, and sexual integrity of its students. This protection is violated in lockdown, as girls and adolescents are more exposed to sexual violence within the family, and implementation of sex education programs is delayed.



Also, according to Sedik and Xu (2020), the increased inequality and economic losses caused by the pandemic may be an important trigger of social unrest. According to these authors, this vicious cycle begins with school closures, which in turn lead to high dropout rates. School dropout mainly affects the most vulnerable populations, who consequently earn even lower incomes, deepening inequality. Thus, the intergenerational transmission of low educational attainment and income exacerbates economic and social inequality, which ultimately leads to social conflict. This series of events is of particular concern in the region, where dropout rates caused by the COVID-19 pandemic are particularly high.



iii) The impact on mental health

In addition to the effects on the economy, school closures have significant impacts on the socio-emotional and motivational well-being of children, adolescents, and their caregivers. In part, this is due to the lack of contact with classmates and the psychological tensions within the family, which can increase risks of domestic violence. For children, separation from friends and classmates, decreased daily interactions with their peers, and disruption of structures and routines can increase feelings of loneliness, depression, and anxiety. Parents and caregivers are also affected by mental health problems, as they have to add the role of teacher to their roles as caregivers and/or income providers (Näslund-Hadley et al. 2020; de Hoyos and Saavedra 2021). These effects are particularly marked in vulnerable families with unstable employment and belonging to certain ethnic groups (Gassman-Pines, Ananat, and Fitz-Henley 2020). Vulnerable households tend to have parents with lower levels of education; the support they can provide to their children is more limited. These factors make students from these homes more prone to toxic stress, intrafamily violence, and economic insecurity, which negatively affect their learning (Morsy and Rothstein 2019).



An IDB study (Näslund-Hadley et al. 2020) interviewed 62,837 households in Colombia, Costa Rica, El Salvador, and Peru about their experiences with emergency distance learning and their mental health during the pandemic. Eighty-five percent of participants reported experiencing at least one symptom of impaired mental health (sadness, 48 percent; tiredness, 66 percent; fear, 60 percent; and insomnia, 59 percent). These symptoms increased with the loss of employment and income. Moreover, maternal, paternal, or caregiver distress was found to reduce remote learning opportunities for children and increase the use of violent discipline. This study suggests that, if government actions to prevent and address stressors are not prioritized, especially for vulnerable households, unprecedented consequences for the mental health of children, adolescents, and their caregivers lie ahead.

The costs of maintaining the status quo in the region, with limited opportunities for access to quality education, will have long-term effects difficult to reverse. The urgency of addressing immediate issues caused by the pandemic has caused us to neglect consideration of the high and serious long-term costs of suspending face-to-face classes. In addition to these costs, discussed in this section, school closures jeopardize the already violated right to quality education of the region's children. For this reason, countries' response and recovery plans must include education as a central element, seeking to address the deepening inequality triggered by school closures.



Educational and wage losses in Latin America and the Caribbean

Education in Latin America and the Caribbean: previous situation and distance education

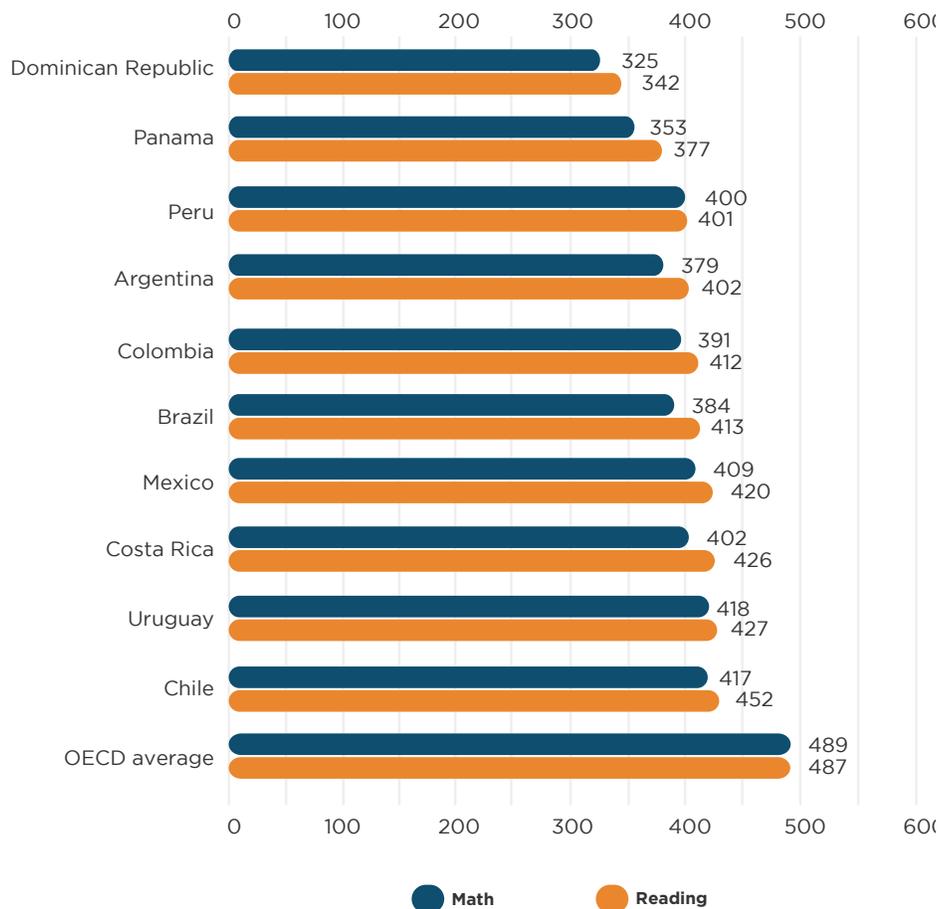
Prior to the pandemic, the countries of the region were already affected by problems of low educational performance, low schooling averages, and learning deficiencies. The results of standardized assessments make it possible to compare academic achievement at the international level. PISA tests show discouraging results for the region. The 2018 edition, in which ten Latin American and Caribbean countries participated, shows that all the countries evaluated have averages below that of the OECD, with Chile and Uruguay being the closest to that threshold, having scores like those of Greece, Malta, and the United Arab Emirates (Graph III.1). Among the worst performers are Panama and the Dominican Republic, which are part of the group of countries with the lowest averages, along with the Philippines, Kosovo, and Lebanon—equivalent to being up to three years behind the average OECD student (OECD 2021).

"Prior to the pandemic, the countries of the region were already affected by problems of low educational performance, low schooling averages, and learning deficiencies."



Graph 3.1

PISA 2018 results in Latin American countries



Source: OCDE (2021)

Overall, the region has a high level of learning poverty, with 51 percent of children unable to understand and read simple text at age 10; ; the global average is 48 percent. These data place it at levels similar to the average for low- and middle-income countries (World Bank 2021).

Analysis of these distributions adds some worrisome elements to the low performance. For example, when studying Latin American countries through measures of dispersion and asymmetry, Medina Gual (2018) finds that, in addition to low averages, the distributions are heterogeneous and asymmetric. This shows that educational inequality was a major problem even before the pandemic shock. Not only is there a large gap between the highest- and lowest-performing students within countries, but most students are concentrated in the second group. These inequalities, in turn, affect more children and youth from more disadvantaged socioeconomic and geographic backgrounds—that is, from poorer backgrounds and racially diverse environments (World Bank 2021; Duarte, Bos, and Moreno 2009).



In this context of low-quality learning and unequal distribution, COVID-19 arrived, forcing the closure of face-to-face activities in schools and further affecting the region's education systems.

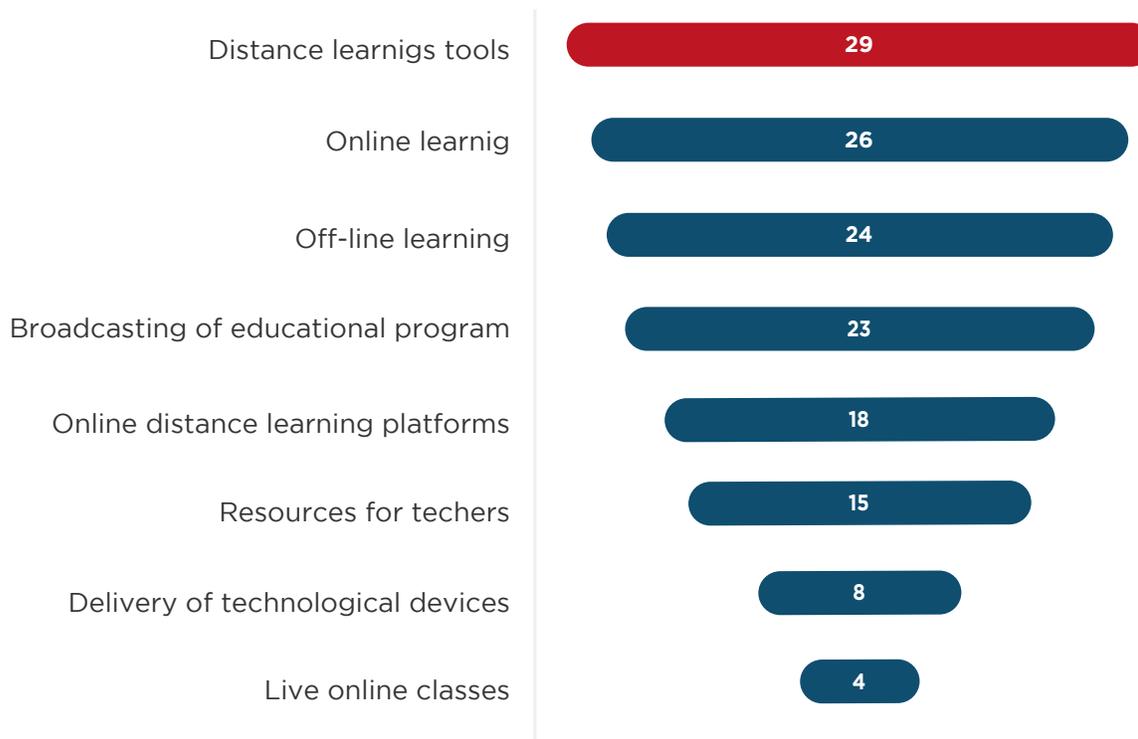
Social distancing measures to reduce virus transmission resulted in the mass closure of in-person educational activities in more than 190 countries around the world, impacting more than 1.2 billion students at all levels of education. Of these, more than 160 million were in Latin America and the Caribbean (CEPAL and UNESCO 2020).

Of the 33 countries in the region, 32 suspended face-to-face classes, and of these, 29 implemented distance learning measures and instruments. Strategies included online learning tools, broadcasting educational programs on television or radio, delivery of electronic devices to students, and teacher training. The extent to which different countries adopted these actions is summarized in Graph III.2. In it we can see that, although almost all the countries had strategies for continuity of studies during the interruption of face-to-face activities, most of them focused on online tools, based on electronic devices, or mass media such as television and radio.



Graph 3.2

Strategies for continuity of studies in distance modalities in 33 Latin American countries

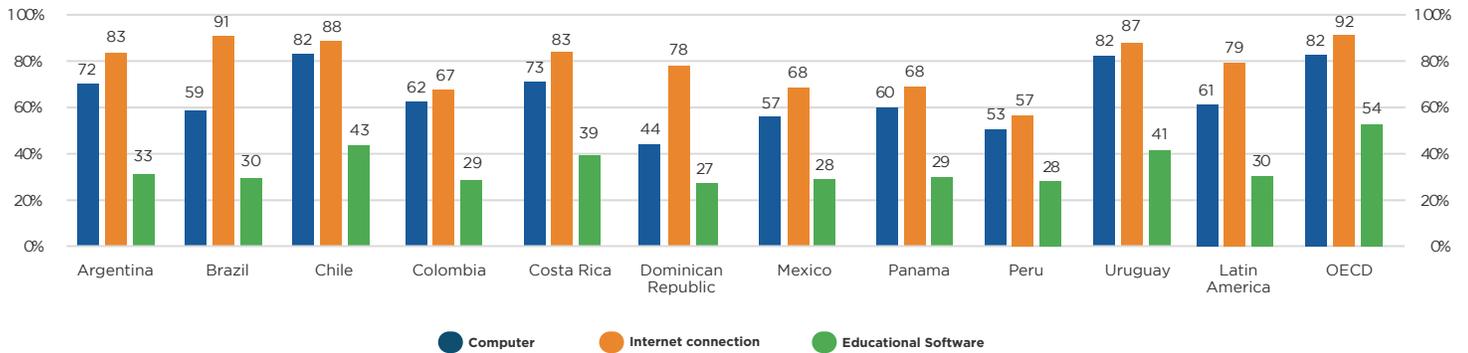


Source: CEPAL y UNESCO, 2020.

Only eight countries considered the delivery of technological devices: Argentina, Chile, Colombia, El Salvador, Jamaica, Peru, St. Vincent and the Grenadines, and Uruguay. This is especially relevant because LAC is a region with a significant digital and IT access gap. According to CEPAL data (CEPAL and UNESCO 2020), in 2014 only about 42 percent of people living in urban areas and 14 percent in rural areas had internet access (not including mobile internet access). By 2018, 79 percent of students in the region who participated in the PISA test had internet access in their homes, and only 61 percent had access to a computer (Graph III.3). This access is unequally distributed within countries: for example, when comparing the ownership of digital devices by socioeconomic and cultural level between the first and last quartile, it decreases by 25 percent for Chile, the least unequal country, and by 65 percent for Mexico, the most unequal. On the other hand, data from the World Bank (Graph III.4) show that, although internet access is already widespread in most of the region, access is far from universal even in the countries with the highest penetration—less than 50 percent in Central American countries. These conditions of inequality and precarious access to technology, as well as below-average performance on international standardized tests, suggest that mitigating post-lockdown learning loss will require an extraordinary effort, as the access and quality gap was already significantly large before the pandemic.

Graph 3.3

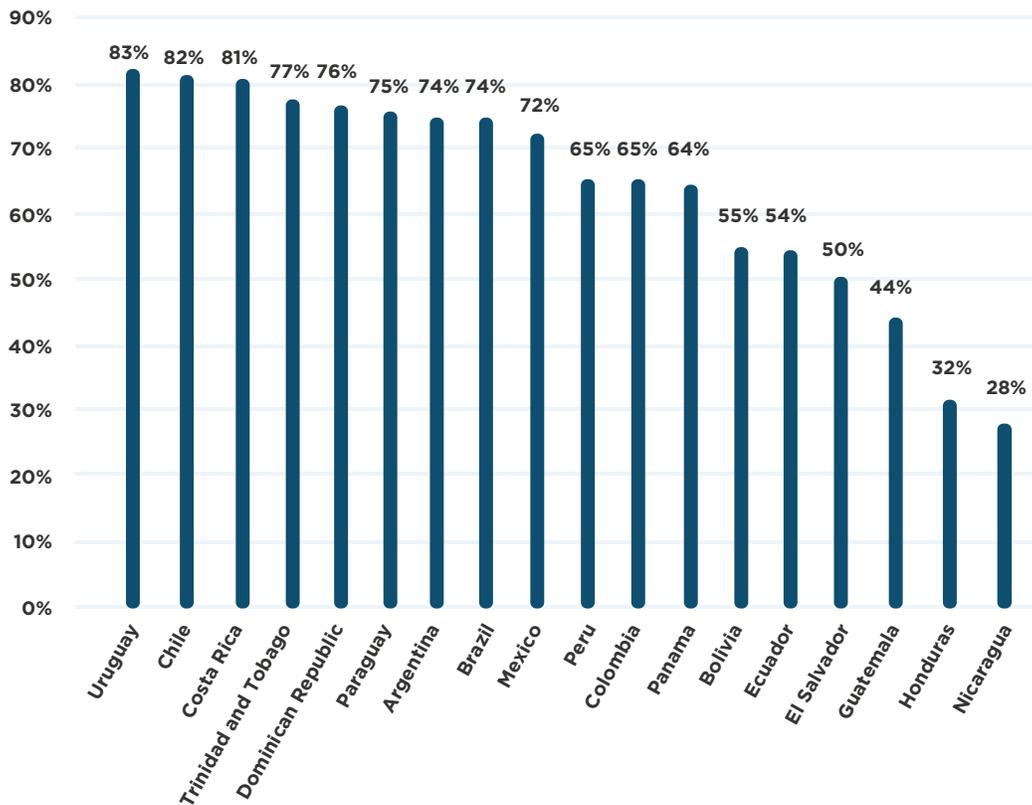
Access to digital equipment at home among students age 15, 2018 (10 Latin American countries)



Source: OCDE (2021)

Graph 3.4

Internet penetration statistics for Latin America and the Caribbean



Source: World Bank: World Development Indicators (2021).

At a general level, four types of educational platforms were identified in the countries' distance learning strategies: general-purpose platforms for asynchronous teaching, such as Learning Management Systems or “virtual campuses” (Moodle, Google Classroom, Blackboard, etc.); videoconferencing platforms for synchronous teaching (Zoom, Google Meets, etc.); online chat platforms for team collaboration (Slack, MS Teams, Google Chat); and special-purpose educational platforms, mainly gamified learning platforms (Kahoot, Duolingo) and digital file repositories (YouTube, Vimeo, etc.) (Artopoulos 2020).

Furthermore, teaching and evaluation processes have had to be adapted to the extraordinary conditions under which education is being carried out in this context. Mexico, for example, adopted a learning portfolio assessment framework with no tests, assessments, or final exams. In Ecuador, qualifying exams were postponed. Other countries simply suspended the national evaluation processes (CEPAL and UNESCO 2020).

This situation prevailed through most of 2020 and most of 2021. Of the four countries in the world where schools were closed for the most days, three are in this region: Panama, El Salvador, and Bolivia (UNICEF 2021). It is estimated that Latin America has had the longest school closures of any region in the world, with an average of 159 days without classroom activities (World Bank 2021).

As health conditions improved, countries began to resume face-to-face educational activities. Uruguay, which began gradually reopening its schools between April and June 2020, was the first in the region. By spring 2021, most Caribbean countries had restored in-person activities. As of the completion of this document—October 2021—all Latin American countries have at least partially resumed on-site activities; Uruguay and Nicaragua have completely resumed on-site activities; and only in Cuba are the schools still closed due to COVID-19 (UNESCO 2021).



Calculating the loss of wages due to school closures: methodological framework

Next, the effect of school closure on student learning in the region has been calculated.

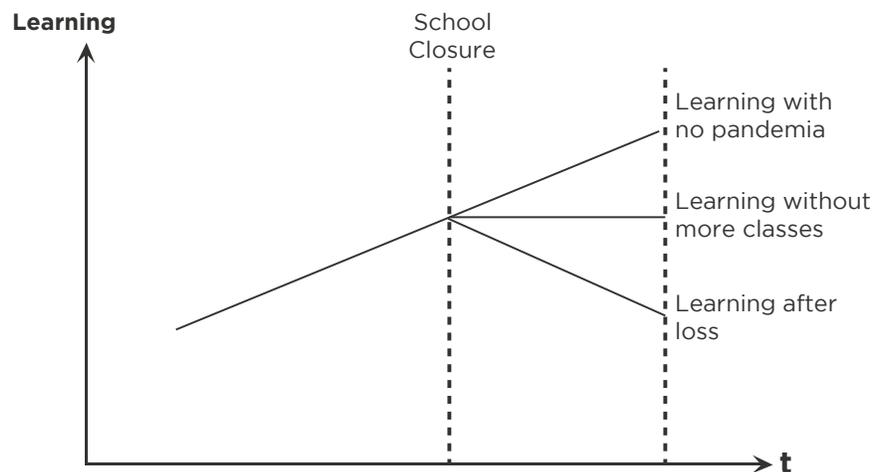
The estimated magnitude of the wage losses of the affected cohorts was derived from the estimate of learning loss. This model for calculating economic loss for students affected by school closures is based on the analytical framework used by Morduchowicz and García Moreno (2021), incorporating an analysis by individual cohort in which the income of the total population of the cohort is estimated by point age and calculating the returns for each country (Annex B. Methodological note).



The calculation methodology is based on the premise that closures produce a learning loss in two ways: the lack of new learning due to the lack of educational activities, and the absolute decrease in learning that is forgotten due to the lack of academic activities. This is depicted in Figure III.1.

Figure 3.1.

Individual learning loss analytical framework



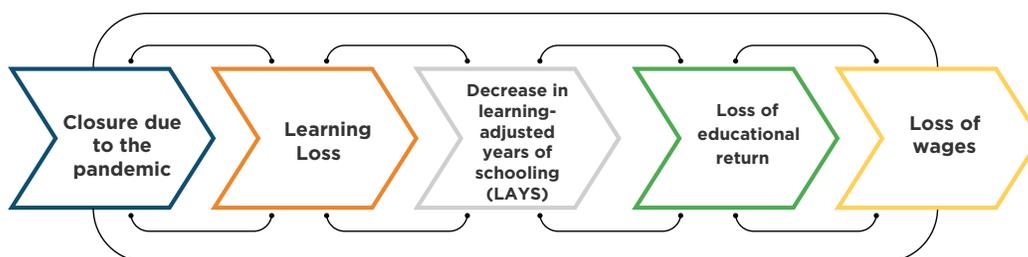
Source: Own preparation based on Azevedo and colleagues (2020).



Subsequent analysis assumes that this learning loss is reflected in a reduction in learning-adjusted years of schooling (LAYS). This implies a lower efficiency in the schooling of individuals, which affects their educational returns and, consequently, reduces their wage income during their entire working life (Figure III.2).

Figure 3.2

Causal mechanism of pandemic wage loss



Source: Own preparation.

The affected population, according to this model, will be the current students between ages 6 and 18 in Argentina, Chile, Colombia, Costa Rica, and Mexico: 52,388,000 children and adolescents. Although a significant percentage of these were no longer in the classroom even before the pandemic, the wage and loss estimates consider full cohorts, because those absent will also be part of the labor market and the average wage structure. We assume a productive life of 45 years and observed wages from ages 18 to 64 based on age averages from household surveys in each country and constant mortality for each age level.

The first step in analyzing the loss from school closures was to obtain the present value of future wage gains in a non-pandemic scenario. We refer to this as the baseline scenario. To calculate it, we constructed the subjects' population dynamics until the end of their working life, using population projections and vital statistics from the statistical institutes of each country. Thus, a population series of 59 years was developed for the 6-year-old population in 2020 and 47 years for the 18-year-old population in 2020. They were then imputed the national average wage for each age of working life using household surveys. With this, all future wage earnings for the 45 years of productive life were brought to present value, assuming a discount rate of 3 percent. (For more detail on the calculation of the cohorts' working-life earnings, see the Methodological Note in Annex B.)

From this, the total working-life earnings of the cohorts studied were calculated in present value with a weighting for the wage loss produced by the educational loss. Finally, base scenario earnings and loss scenarios were compared to assess the effect of the pandemic and learning loss on wages.

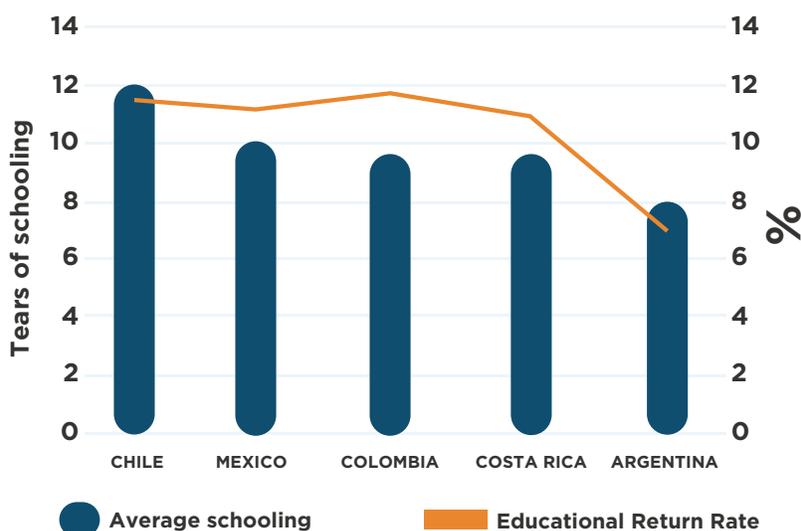
The period of closure of face-to-face activities due to the pandemic was obtained from UNESCO (2021). Data on schooling, mortality, income, and PISA results from Latin American countries for which information is available were used. In this case, representative calculations were generated for Argentina, Chile, Colombia, Costa Rica, and Mexico, which are the Latin American countries where the population, income, and mortality data necessary to perform these calculations are available. The information on schooling and income comes from the household surveys of the statistical institutes of the countries studied, and the mortality data come from the vital statistics of the same institutes.

Evaluation of results

We start from a baseline scenario where the observed schooling rates of the countries translate into rates of return of around 7 percent to 11.5 percent (Graph III.5). The rate of return is slightly correlated with years of schooling. In a no-pandemic scenario, this level of study among the population ages 6 to 18 would translate into a total labor gain of US\$10.42 trillion PPP (Purchasing Power Parity) in net present value (Table III.1). The net present value of working-life income per capita varies from US\$178,000 in the case of Mexico to US\$312,000 in Chile.

Graph 3.5

Loss of educational return



Source: Own preparation based on the results of the model.

Table 3.1

Total labor income in the base scenario (in billions of U.S. dollars in net present value)

Country	Net Present Value (NPV) of total pre-pandemic working-life income (billions of U.S. dollars PPP)	Net Present Value (NPV) of working-life income per capita pre-pandemic (U.S. dollars PPP)
Chile	1027.38	312,753.36
Colombia	1,911.55	183,533.73
Costa Rica	287.09	295,578.69
Mexico	5,048.73	178,215.69
Argentina	2,149.99	229,034.66

Source: Own preparation based on the results of the model.



The countries' loss of face-to-face classes ranged from 67 to 189 school days, equivalent to one-third and up to almost a full year of school activities, respectively (Table III.2).

Table 3.2.

Duration of in-person activity closures

Country	Days of closure	Length of school cycle	% of school cycle in closure
Argentina	111	202	55,0%
Chile	67	202	33,2%
Colombia	115	176	65,3%
Costa Rica	189	193	97,9%
Mexico	180	188	95,7%

Source: UNESCO (2021).

Based on these data, loss calculations were performed for five mitigation scenarios:

- **Scenario 1:** No mitigation. All weeks of closure equal total learning loss.
- **Scenario 2a:** Mitigation of 25 percent of learning loss.
- **Scenario 2b:** Mitigation of 50 percent of learning loss.
- **Scenario 2c:** Mitigation of 75 percent of learning loss.
- **Scenario 3:** No learning loss, adding a year of schooling, and postponing entry into the labor market by one year.

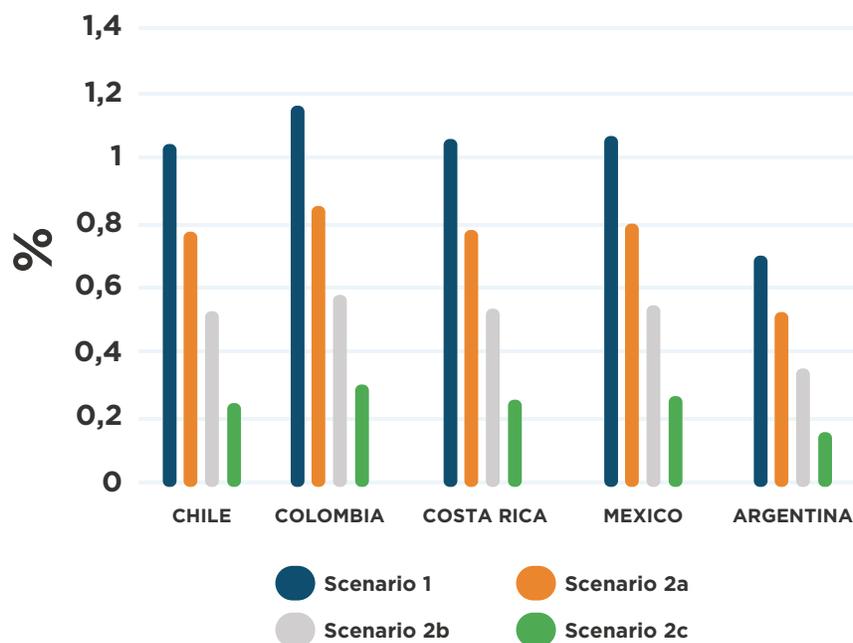
These scenarios are constructed assuming that one year of classes is equivalent to 40 PISA points (this assumption is based on the estimates of Azevedo and colleagues [2020]). This loss of learning due to the absence of face-to-face classes translates into different levels of loss of educational returns, which are similar among countries (Graph III.6). These range from 0.17 percentage points with respect to the base scenario, for the most optimistic scenario in Argentina, to 1.15 for the most pessimistic scenario in Colombia. This implies that, for example, in scenario 2a, each additional year of schooling would increase the income of individuals by approximately 0.8 percent less because of the pandemic.



Note that the countries with the highest return loss are also those that had the highest educational return prior to the pandemic. Thus, the countries that had the best levels of learning prior to the closure of face-to-face activities are the ones that lose the most returns due to the pandemic.

Graph 3.6

Loss of educational return

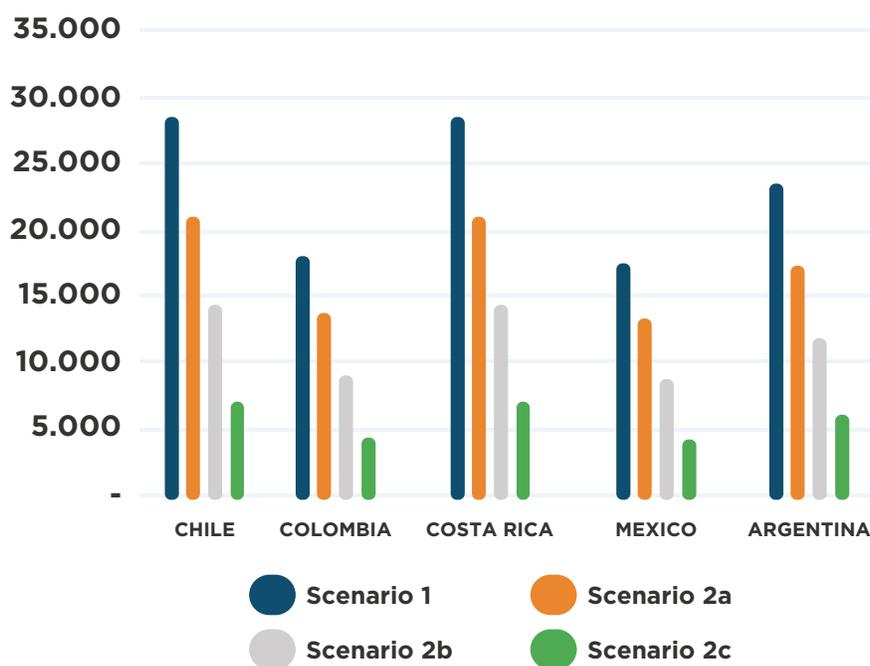


Source: Own preparation based on the results of the model.

On the other hand, Graph III.7 shows the loss per worker during his or her entire working life, in net present value. Obviously, scenarios with lower mitigation generate a higher level of losses. In this case, the magnitude of the scenarios does vary between countries. Thus, while Chile and Costa Rica register an upper limit of losses of just over US\$28,500 (in the most catastrophic scenario), Mexico and Colombia estimate losses of around US\$17,000 to US\$18,000 over the entire working life of 45 years (from ages 18 to 63). Although the difference between these two groups of countries is more than 60 percent, this is due to the characteristics of their wage structure, since the losses compared to the income without pandemic (or baseline) are almost the same in all the countries studied: around 2.4 percent for the lower limit, and between 9.1 percent and 10.1 percent at the upper limit. Table III.3 shows the comparison between the wage loss of the countries in each of the scenarios with respect to the baseline of the no-pandemic scenario. In this case, mitigation actions can reduce the wage loss by as much as eight percentage points, assuming they are 75 percent effective.

Graph 3.7

Net Present Value (NPV) of per capita loss



Source: Own preparation based on the results of the model.

Table 3.3

Wage loss as percentage of baseline

Country	Scenario 1	Scenario 2a	Scenario 2b	Scenario 2c
Chile	9.13%	6.85%	4.57%	2.28%
Colombia	9.86%	7.40%	4.93%	2.46%
Costa Rica	9.64%	7.23%	4.82%	2.41%
Mexico	9.61%	7.21%	4.80%	2.40%
Argentina	10.12%	7.59%	5.06%	2.53%

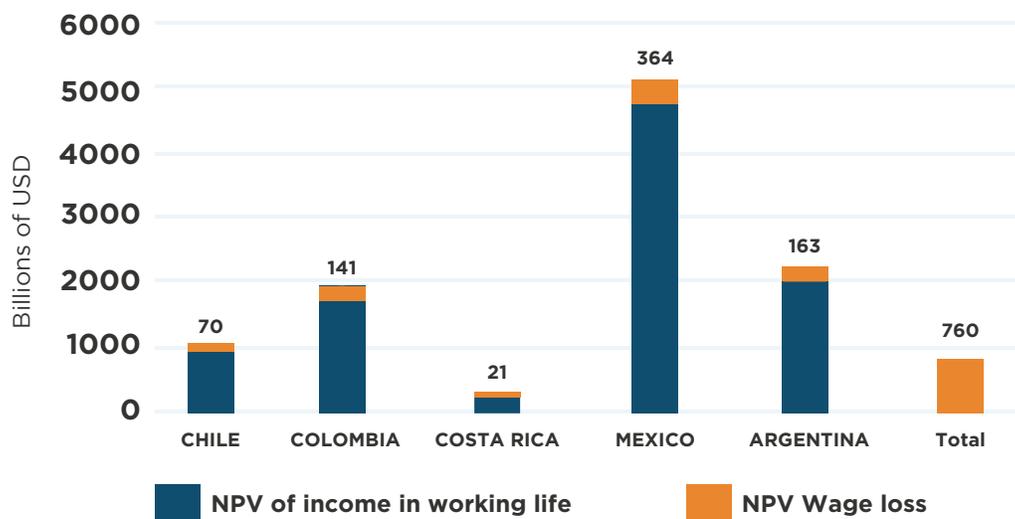
Source: Own preparation based on the results of the model.

However, it is very likely that the result observed will be the closest to the most pessimistic. This is because, as the evidence presented in the previous sections has suggested, mitigation measures have little effect in contexts of inequality and lack of access to digital distance education tools. Scenario 2c, with an extraordinary mitigation of 75 percent, would be achievable only if mitigation and remediation measures were taken for the loss of knowledge that occurred during the closure period.

Graph III.8 shows the total losses of the countries in the 25 percent mitigation scenario. At the aggregate level, losses correspond in magnitude to the size of the population and economy of the countries studied. The countries with the largest absolute losses are Mexico and Argentina, whose total value of the wage loss during the working life of the cohorts studied is more than US\$364 billion and US\$163 billion, respectively. This graph shows the magnitude of the impact in the region studied: US\$760 billion in lost wages in the five sample countries alone.

Graph 3.8

Income and wage losses in the working life of the total affected population (Scenario 2a)

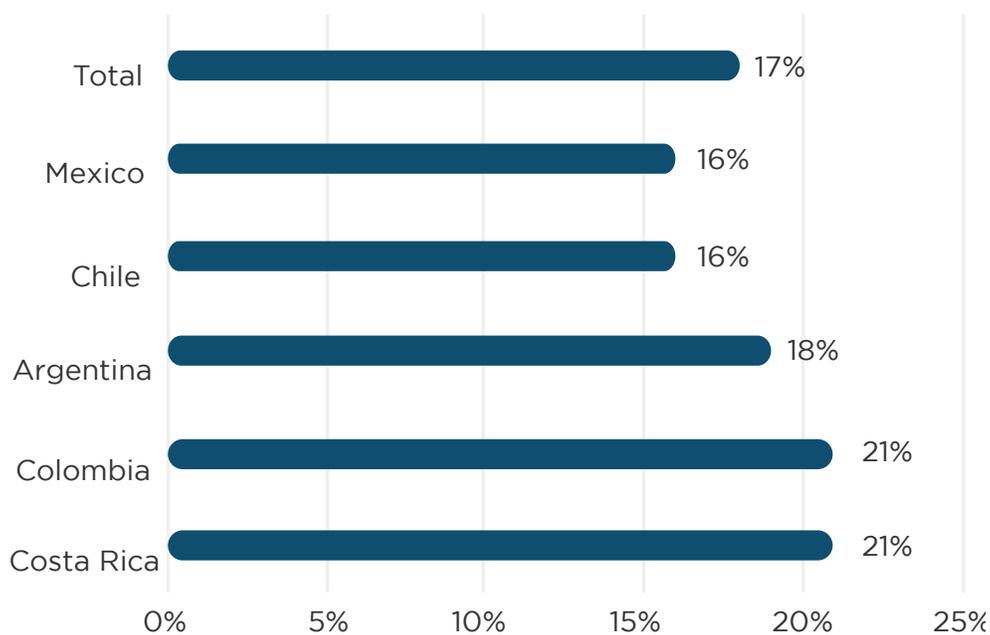


Source: Own preparation based on the results of the model.

These aggregate levels of losses are equivalent to 17 percent of the GDP of the selected countries, which have losses ranging from 16 to 21 percent of GDP in the long term (Graph III.9). This represents a substantial loss of economic output, considering this was a shock lasting less than one year, and this is a lower limit that omits effects such as pandemic-induced school dropouts.

Graph 3.9

Wage losses as a percentage of GDP (Scenario 2a)



Source: Own preparation based on the results of the model.

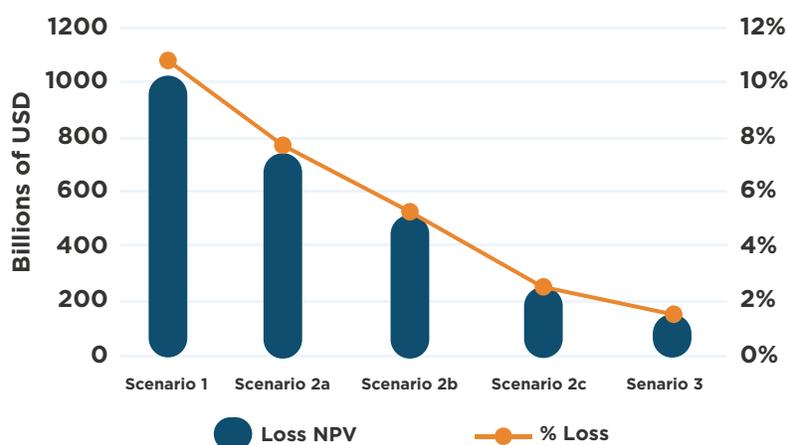
The scenarios are presented as ranges in which loss can occur, so mitigation is crucial to avoid the most catastrophic scenarios. Educational interventions that seek to reduce learning loss must also consider the structural inequalities in the countries; policies to mitigate the effects of the closure could have no effect in populations with greater vulnerability or poverty, given the conditions of access to a computer and the Internet and the existing disparity in educational attainment even before the pandemic. Note that this population only accumulates what it learns in school activities during class hours, since these students do not have the opportunity to learn outside the school cycle in extracurricular activities, tutoring, or summer schools—which creates learning gaps between school cycles and compounds the effect of closures (Morduchowicz and García Moreno 2021). These considerations have strong regional components that will condition the mitigation response of national governments, since the distribution of losses within countries will respond to regional dynamics of inequalities and access.



In scenario 3, entry into the labor market is postponed by one year, effectively reducing working life by one year with the goal of adding one year of learning to offset the year lost due to pandemic closure. This is not a policy solution that has been proposed anywhere, but it is of analytical interest assuming that such a measure remedies all the learning losses derived from distance education and results in the smallest amount and percentage of total losses (Graph III.10) as well as the lowest losses for each of the countries (Table III.4).

Graph 3.10

Total and percentage wage losses by mitigation scenario



Source: Own preparation based on the results of the model.

Table 3.4

Wage loss of the scenario without learning loss due to one-year delay of labor market entry

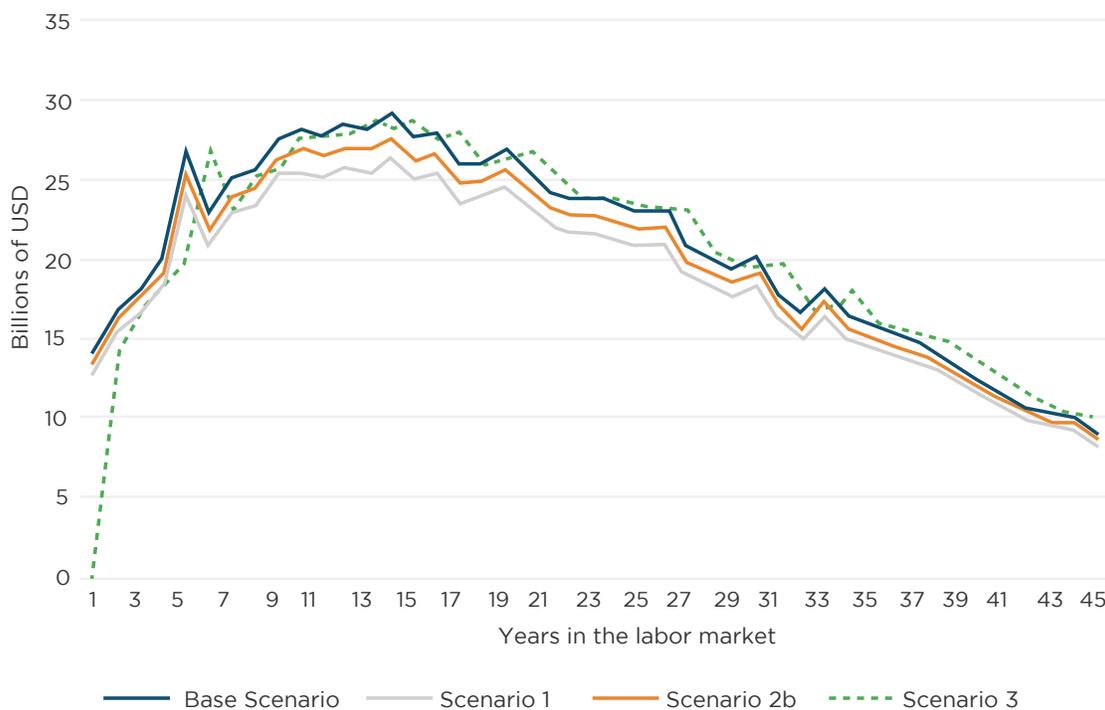
Country	NPV of wage loss (U.S. billion dollars PPP)	NPV of per capita wage loss (U.S. dollars PPP)	Wage loss as percentage of baseline
Chile	15.31	4661.0	1.49%
Colombia	30.64	2941.6	1.60%
Costa Rica	4.38	4514.2	1.53%
Mexico	82.29	2904.9	1.63%
Argentina	26.90	2865.6	1.25%

Source: Own preparation based on the results of the model.

Graph III.11 shows an example of wage losses over time for a generation. It shows different scenarios of the total income trajectories for each year of the working life of the cohort of those born in 2003, who would enter the labor market in 2021. It can be observed that the years of highest productivity, corresponding to 10–20 years in the labor market in adult life, are those most affected by wage loss: that is, between ages 28 and 38. The figure also shows that the smallest reduction in wages occurs in scenario 3, the one in which entry into the labor market is postponed to recover lost learning (the dotted line), since it corresponds to the income trajectory of the baseline shifted one year to the right. We highlight the 25 percent mitigation scenario 2b as a reference because it is the mitigation measure most likely to be effective. The wage loss will be anywhere in the range between the baseline scenario (the black line) and scenario 1 without mitigation (the gray line). Their precise positions will depend on the effectiveness of the mitigation measures taken to avoid the greatest possible loss (the wage trajectories by country can be explored in more detail in Annex D).

Graph 3.11

Salary trajectories of the total 2003 cohort under different scenarios



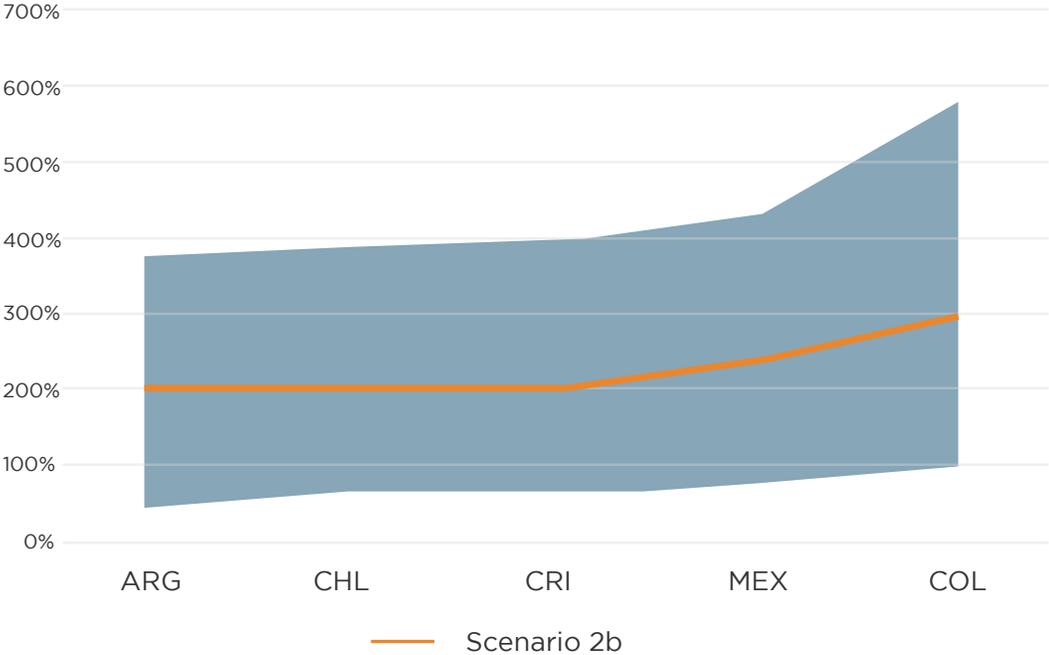
Source: Own preparation based on the results of the model.

However, in all cases, the loss remains considerable, and the cost of the pandemic to the economies of all countries is enormous. The evaluation of its impact and potential mitigation should be carried out in light of the potential losses mentioned here as well as its fiscal cost.

As a first approximation to a cost-benefit analysis, Graph III.12 presents the threshold of losses according to the different scenarios in terms of annual public spending on education. The range of possibilities is quite wide between scenario 3 (the lowest loss scenario—the lower shaded band), scenario 2b (the blue line), and scenario 1 (no mitigation—the upper shaded band). But there is a consistency in all of them: the cost of educational losses is very high in terms of the expenditure made in this area. With almost any outcome, the long-term loss from the pandemic is larger than the entire annual educational expenditure for each of the countries; in a pessimistic scenario, this loss could be equivalent to the entire educational expenditure for four to six years. This comparison is useful in defining the relevance of educational spending aimed at mitigating learning losses from the pandemic: an investment of a fraction of the losses over a period of a few years can reduce the shock to wages of closing schools for an entire generation.

Graph 3.12

Wage loss as a percentage of public spending on education



Source: Own preparation based on the results of the model.



Policy implications

The COVID-19 pandemic exposed the structural weaknesses of educational systems. Most of the countries in the region were already facing significant learning gaps and disparities in the distribution of educational resources among their populations. COVID-19 and the structural weaknesses of these systems have exacerbated the educational backwardness of vulnerable populations.

School closures due to the pandemic exposed the lack of resilience of our education systems and their structural problems. The discontinuity in face-to-face schooling, in addition to producing pernicious effects both present and future in educational and social terms, will also impact the economy as a whole.



The economic impact of inaction

To understand the dimension of the problem in wage and economic terms, in this chapter the value of the per capita wage loss was estimated as a percentage of the baseline scenario and as a percentage of GDP for the cohorts ages 6 to 18 of the countries studied in net present value. The calculated return losses range from 0.17 percent for Argentina in scenario 2c (with mitigation measures for 75 percent of the learning losses) to 1.15 percent for Colombia in scenario 1 (without mitigation measures). These calculations showed that countries with better levels of pre-pandemic learning record higher return loss.

In terms of wage losses, the countries studied could lose around US\$760 billion in wages in a 25 percent mitigation scenario. Likewise, adding a year to schooling to make up for lost learning represents a loss of 2 percent of working-life income. In a pessimistic scenario, about 11 percent of working-life income could be lost. However, this can be reduced to 5 percent with a 50 percent mitigation.

Regarding losses as a percentage of GDP, the income flow lost during the 45 years of the working life of the affected cohorts is equivalent, in net present value, to 17 percent of the GDP of the countries studied due to learning loss alone. These losses are equivalent to 2–3 years of public spending on education. Moreover, the value of the loss is equivalent to a decrease in GDP growth of 0.34 percent per year during those 45 years of working life. According to these estimates, the largest loss in absolute terms will be in Mexico, with US\$364 billion (due to the size of its economy). In contexts of low growth, as is the case in most of the countries of the region, this loss of production is also important, especially considering the duration of its effects (an entire generation) and comparing them with the costs and duration of mitigation measures.

Given the enormous magnitude of the losses, mitigation measures such as catch-up learning are a profitable and necessary investment for the region's economy. This is why investing in education must be a fundamental part of the health crisis response and recovery strategy.



The resources needed for the action.

The countries of Latin America and the Caribbean faced the onset of the pandemic with a weak fiscal position: the region had experienced a decade of low economic growth that resulted in stagnant fiscal revenues. This, combined with growing public spending, led to an increase in the fiscal deficit and public debt (CEPAL 2020). Even before the pandemic, there were substantial deficits in school infrastructure, teacher quality, learning assessment, and the use of technology to improve learning in the region.



First, we recommend to increase or maintain the share of public spending on education at least between 4 percent and 6 percent of GDP and/or between 15 percent and 20 percent of total public spending (UNESCO 2021). By 2020, a negative impact on budgets and future projections for education spending was expected, limiting the capacity to respond and imposing fiscal pressures on ministries, which must meet new demands (in addition to pre-pandemic problems) and cope with the reduction in revenues available for education. Specifically, it is estimated that the region would need to invest around US\$3.45 billion per year to build new school infrastructure to accommodate growing enrollment, US\$4.4 billion to repair infrastructure in rural and high-poverty areas, US\$5.5 billion to provide schools with technology to offer hybrid education, and US\$4.85 billion to strengthen the teaching profession.

Financing is one of the most powerful instruments for carrying out educational policies: it is a matter of having the resources to generate some of the minimum conditions for education. Therefore, there is a need for analysis of the gap between (a) what is currently being invested and (b) the double demand of the resources needed prior to the health crisis plus what will be required as a result of the effects of the crisis on education systems (UNESCO and IDB 2020).

Furthermore, the way in which resources are distributed is not neutral in terms of equity and quality. If investment does not reach those who need it most and instead is directed only to the most favored sectors, existing inequalities will increase. The pandemic may even aggravate this pre-crisis situation (Elacqua et al. 2020). In turn, spending efficiency is crucial to achieve equity objectives. In contexts of scarce resources, high needs, and high inequality, spending efficiency is an imperative: wasted resources mean fewer opportunities for the most disadvantaged (UNESCO and IDB 2020).

The issue of educational investment needs to be put on the agenda and discussed. Otherwise, the fate of education will depend on what schools, their teachers, and students can do on their own without major resources. Financing may not be the most urgent issue, but it is no less urgent and important. That this is not recognized is perhaps because the effects of underinvestment will not be felt immediately, but its consequences will be seen in a few years and will impact the quality of our lives and those of future generations. Any insistence on the costs of not educating will be too little. Inaction and inertia will lead not to the status quo but to greater exclusion and deterioration of the social and productive fabric (Morduchowicz, A. 2020; UNESCO and IDB 2020).



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Chapter 4

Taking Education Where It Needs to Be



Authors

Elena Arias Ortiz

Emma Näslund-Hadley

Verónica Frisancho

Evelyn Vezza

$E=mc^2$

$f(x) = mx + b$

Summary: We review evidence-based **education programs and interventions that policymakers can implement to address the main challenges education systems face in the post-pandemic context: low learning levels, high dropout rates**, and increasing gaps between vulnerable students and their peers. We review evidence on whether school-based interventions are effective in improving academic outcomes and outcomes related to student and teacher well-being and mental health and developing global citizenship competencies. We examine evidence on both short-term interventions suited to conditions similar to the ones we have today and policies and programs that aim at having a transformational effect on education systems in the region and can be implemented in the medium term.

"This chapter reviews evidence-based education programs and interventions that policymakers can implement to address the main challenges facing education systems in the post-pandemic."

Our results highlight **four core groups of recommendations** and policies that are scalable and possible to contextualize in response to country-specific needs.

First, school systems in Latin America and the Caribbean need to reengage the many youth who have lost contact with their schools during the pandemic, ensuring that they complete their education and career pathways.

Second, the region should seize the opportunity presented by the huge investments made during the pandemic in the use of educational technology, seeking to permanently close the digital divide, produce high-quality online content, and digitally transform education systems.



Third, school systems should tackle the learning crisis by accelerating (not simply remediating) learning as a central part of their policy agenda to respond to the COVID-19-related learning slide. This means focusing on core concepts students must master to progress at grade level, providing targeted support to those that struggle the most using in-person or online tutoring, and working on curriculum redesign and instructional approaches.

Fourth, education systems must equip youth with the global citizenship competencies and mental well-being they need to excel in school, work, and life.



In March 2020, most schools in Latin America and the Caribbean (LAC) closed their doors, and by mid-2022, in several countries, in-person learning still had not resumed. The number of lost days of schooling is greater in LAC than anywhere else in the world. The decision to keep schools closed combined with a heterogeneous (and often limited) policy response to prevent and mitigate learning losses has had consequences on an unprecedented scale: the likelihood of dropping out has increased, learning lags are found among those who still attend school, preexisting educational gaps have deepened, and the risks of having an unsuccessful transition to the labor market have increased. In addition, the disconnect from school generates feelings of isolation among students, increases the incidence of risky behaviors, and deteriorates mental health. These challenges accelerated by the pandemic add to an already wide spectrum of obstacles youth across the LAC region face.

To face this educational crisis, education systems must prepare their policy response handling a myriad of complexities. First, systems need to implement interventions to





recover learning at an unprecedented scale. In LAC, grade retention is a common response when students fail to meet academic targets. However, using grade retention as a response to the COVID-19-related learning slide will inevitably widen socioeconomic and racial gaps. Students from advantaged socioeconomic backgrounds would progress while their peers from disadvantaged socioeconomic backgrounds (who, for example, had less access to learning from home resources during the pandemic-induced school closures) would be left behind. Students who are held back without additional support risk falling and staying behind, and decades of research warn that grade retention increases a student's risk of dropping out of school. Accelerated learning for all will help students remain at grade level by focusing on mastery of key concepts with just-in-time support and scaffolding to develop essential skills.

Second, education systems in LAC must address structural problems through more ambitious reforms even as they may face significant budget constraints over the coming years. In this context, policymakers must carefully assess the trade-offs, effectiveness, and costs of potential policy responses and prioritize those interventions aligned with their main policy goals. In so doing, it is critical for education systems to acknowledge that students have experienced highly heterogeneous learning conditions over the past year and a half depending on the capacity for distance learning at home (parental educational level and support, access to devices and connectivity) and the quality of the school-supplied materials (multichannel)—which highlights the need for implementing tailor-made interventions. LAC school systems can expect to find no silver bullet or one-size-fits-all solution to such challenges. Rather, within the fiscal constraints confronting LAC governments in the COVID-19 era, education systems need to focus squarely on equity goals in selecting and adjusting the most cost-effective set of interventions for each context and budget space. In this chapter, we review evidence-based educational policies that aim directly at addressing the main challenges in the post-pandemic context laid out in Chapters I and II: low learning levels, high rates of dropout, increasing gaps between vulnerable students and their peers, low employability, labor market outcomes, and social-emotional and mental health challenges. The evidence on cost-effective programs to address such unprecedented challenges is still scarce in some policy areas. The chapter focuses exclusively on school-based interventions and does not look at initiatives that occur outside the school, even if



linked to education, such as active labor market policies led by agencies concerned with employability or mental health services provided through the health care system. Yet we recognize the importance of such complementary programs to provide holistic support to students, teachers, and families.

This chapter is organized around four policy priorities for bringing evidence-based interventions to bear in schools. First we review initiatives for reengaging students who have lost contact with their schools during the pandemic, to ensure that they complete their education and career pathways. Next we focus on initiatives to close the digital divide, produce high-quality online content, and digitally transform education systems, building on the large investments made during the pandemic in the use of educational technology. The third section concentrates on accelerated learning to tackle the learning crisis and on developing the relevant skills with which youth can secure better opportunities. Finally, the last section presents evidence on what works to equip youth with the global citizenship competencies and mental well-being they need to excel in school, work, and life.



Student Reengagement and Completion of Education and Career Pathways

At the beginning of the coronavirus pandemic, closing schools and restricting social activities were necessary to protect our health and save lives. Facing a new, quickly spreading virus, SARS-CoV-2, countries in LAC and the world closed schools and universities. Education institutions launched various distance learning programs to provide content and maintain a link with their students (Álvarez Martinelli et al., 2020). Schools established emergency remote teaching and used learning platforms, educational portals, social networks, and radio, television, and print resources to reach the largest number of students. However, given the unprecedented costs to learning, enrollment, and student well-being, many countries around the world have since reopened their schools for in-person learning. By following strict protocols for social distancing, use of masks, handwashing, natural ventilation, and other measures for biosafety, they have managed to keep students in school without significantly increasing SARS-CoV-2 transmission (CDC, 2021).

Almost two years after the onset of the pandemic, a growing body of evidence suggests that schools can be opened safely with limited health effects (Goldhaber et al., 2021). Given the critical role schools play in children's academic, social, and emotional development, school reopening for in-person instruction is a top priority for all LAC education systems. Indeed, it has been widely documented that keeping schools closed has strong negative effects on learning, in particular for vulnerable students, and on dropout rates. As described in Chapter II, enrollment rates fell among LAC youth, and assessment of learning losses in Sao Paulo, Brazil, found that during school closures students learned only 27.5 percent of the equivalent of in-person learning (Lichand et al. 2021).¹ School closures also increase the risk of suffering malnutrition due to missed school meals, domestic violence at home for students at risk, and mental health problems such as anxiety, isolation, and depression. A 2020 survey in LAC revealed that around one-fourth of youth ages 13 to 29 reported anxiety, with 43 percent of young women and 31 percent of young men feeling pessimistic about the future (UNICEF 2020a).

1. This is equivalent to a learning loss of 0.32 standard deviation.

"Keeping schools closed has strong negative effects on learning, particularly for vulnerable students, and on dropout."

Following the world's longest closures, the reopening of schools has been particularly slow in the region. Between March 2020 and March 2021, schools remained closed to face-to-face education an average of 158 days (UNICEFa), 166 percent more days than the global average of 95 days. That trend continued and by October 2021, schools in LAC had been closed for in-person learning an average of 231 days. The educational and mental costs of suspending in-person instruction must be taken into consideration together with sanitary risks when deciding whether to close schools. We identify three types of policies to engage students and keep youth in school. First and foremost: reopen schools for in-person learning. Second, identify students who lost their connection with school during the shutdown or are at risk, and reengage them with learning. Third, provide financial incentives and flexible learning modalities to allow children to stay enrolled.

Safe Reopening of Schools for In-Person (and Hybrid) Learning

While the pandemic is still raging in many countries across the LAC region, to stem the unprecedented learning losses described in Chapter II, short-term efforts to reopen schools must be a priority. In August 2021,² students in the region were still exposed to very different learning environments—from complete learning from home in Honduras and Venezuela to full in-person learning in Uruguay.³ Some countries, such as Costa Rica, have reversed face-to-face instruction in response to new surges in COVID-19 cases. **The challenge for education systems is to develop and implement health protocols to ensure safe environments for students and teachers and, at the same time, have contingency plans to return to short periods of remote or hybrid learning when needed.** In the following sections, we provide an overview of programs and measures countries in LAC and beyond can use to reopen schools safely and provide high-quality hybrid learning.

2. Schools were still closed in some countries at the time of printing.

3. UNESCO map on school closures (<https://en.unesco.org/covid19/educationresponse>) y UNESCO Institute for Statistics database, September 2021 (<http://data.uis.unesco.org>).

How can schools reopen safely? Many countries, specialized agencies, and multilateral organizations have developed guides, protocols, and reports⁴ on how to reopen schools safely and the minimum requirements to do so. The guides include specific actions to be taken in school (Table IV.1) in addition to general recommendations on how to guide decision making about future school closures. The actions and recommendations can be organized into three main groups: (1) bring decision making to local officials to have a better assessment of community risks; (2) promote a safe environment by improving school infrastructure but more importantly, health protocols; and (3) avoid mass closures by selecting priority groups that will continue to have access to in-person learning.

Table 4. 1
Strategies for safe school reopening and operation

Strategy	Description	Example
Vaccination	Vaccination is the leading public health prevention strategy to end the COVID-19 pandemic. Promoting vaccination can help schools safely return to in-person learning as well as extracurricular activities and sports.	In November 2021, Costa Rica made vaccination against COVID-19 compulsory for all children. In the United States, Washington, Oregon, the District of Columbia, and Puerto Rico have required teachers to get vaccinated.
Supply and use of masks indoors	Supply of masks to all students, teachers, and administrative personnel.	Schools in Colombia require students to wear their masks throughout the school day. In case they do not have them, school administrators provide clean masks to students.
Testing	Periodic testing systems to rapidly identify coronavirus-positive cases to keep COVID-19 transmission low and students in school for in-person learning, sports, and extracurricular activities. It gives communities, schools, and families added assurance that schools can open and remain open safely for all students.	South Korea, Germany, Italy, and Japan employed mass testing measures and were largely successful in preventing the spread of COVID-19 in schools. The United States is now using strategies like <i>testeo agrupados</i> or <i>testeos para quedarse</i> , as recommended by the CDC.
Student bubbles	A bubble is a group of people that you can be in close contact with while socially distancing from other groups. For students, this implies being exposed to close contact only with their classmates and teacher but being at a distance from other groups. Such social bubbles allow for socializing in indoor or outdoor spaces, in compliance with government regulations, and limiting transmission if one student gets infected.	The public schools of the City of Buenos Aires prepared a protocol of bubbles in schools to avoid massive and constant isolations from September 2020. Most schools in the United States are still using similar strategies to reduce massive outbreaks.

Source: City of Buenos Aires; CDC (2020); Education Week (2021); UNICEF (2020c); and Couzin-Frankel (2021).

4. See IDB's strategies for school reopening (Bos, Minoja, and Dalaison et al. 2020); Framework for Reopening Schools (UNESCO-UNICEF-WB-WFP-UNHCR 2020a); Supplement to Framework for Reopening Schools (UNESCO-UNICEF -WB-WFP-UNHCR 2020b); and UNICEF's recommendations for a safe commute of students during the pandemic (UNICEF 2020b).

Local Decision Making, Risk Assessment, and Clear Communication with School Communities

Even during high levels of COVID-19 transmission, school reopenings were not accompanied by significant increases in community transmission (CDC 2021; UNESCO-UNICEF-WB-WFP-UNHCR 2020b). To foster trust in the education community, it is important to have clear and transparent criteria for mitigation and prevention measures, including those for school closures and reopening. During outbreaks of the Ebola virus, unclear communication on reopening dates negatively affected school reenrollment (Hallgarten 2020). Parameters for school opening and closing require data collection on both epidemiological and school conditions. The design of responses requires an understanding of how students, teachers, and the whole school community are coping with protocols, including connectivity and availability of devices at home, school commutes, underlying health conditions of staff, school capabilities to implement control measures, and sanitation facilities and practices. Such data, by definition, are local, which highlights the need for decisions to be made at the local level to minimize education disruptions.



Protocols and Guidelines for Schools, Students, and Teachers

Among the most significant measures are those connected to managerial practices of physical and human resources for reopening. Although some physical measures may require specific investments—such as scaling up water supply or sanitary facilities—most prevention measures are of low cost. Procedures to minimize disease transmission entail organizing the use of the physical space, such as the rearrangement of desks to ensure a distance of at least one meter among students, ventilation, provision of protective equipment, testing, and moving classes or activities outdoors. Efficient management and planning of



school schedules and daily organization can add additional prevention measures such as reducing students' rotation through classrooms; staging arrival, dismissal, breaks, and mealtimes; reducing class size; cleaning; and hygiene procedures. In addition, schools should set up mitigation measures applicable inside and outside school hours such as defining protocols for students' safe and healthy commuting to school, symptom screening, isolation of cases, communication with families, contact tracing, and quarantining exposed students, teachers, and school staff (UNESCO-UNICEF-WB-WFP-UNHCR 2020b; UNICEF 2020c).



Avoidance of massive school closures and prioritization of early learners and students with special needs.

The magnitude and long-lasting effects of suspending in-person learning are well known, and as a consequence, efforts to restore face-to-face schooling matter. When local health conditions deteriorate and closures are necessary, specialized agencies suggest avoiding massive closures and prioritizing face-to-face school attendance of students who may bear a higher cost of learning from home instead: preschool and primary school students, students with special needs, or those that need to sit exams in order to graduate (UNESCO-UNICEF-WB-WFP-UNHCR 2020b).



Dropout Prevention and Student Reengagement

Students' dropping out of school is often a complex and multifaceted phenomenon explained by academic underachievement, economic challenges, lack of close support, or unrealistic expectations. Effective strategies for keeping students in school require first an accurate identification of the main barriers that lead students to disengage. Then, reengagement strategies—often characterized by a multisectoral approach and involvement of actors beyond the school, including community organizations and parents—should be implemented. However, no single policy is a silver bullet. To keep youth enrolled, schools should rely on a mix of preventive and compensatory measures to reduce dropout rates.

Early Warning Systems for At-Risk Students

Identifying and tracking at-risk students during remote and hybrid learning is key. The signs of student disengagement start before the decision to leave school is made. However, the suspension of in-person schooling during the COVID-19 pandemic has frustrated the monitoring of early warning signs. At the same time, the pandemic-induced increase in student trauma and stress makes it imperative that school systems look for different types of early warning signs for dropout. Students may show progressive signs of disengagement such as diminished involvement in synchronous learning, missed online classes, not accessing digital learning materials, delivering poor-quality assignments, displaying inappropriate activity in online chats, or exhibiting a concerning behavior (Kassner, Jonas, and Klein 2020). Virtual absenteeism is a key sign of student disengagement. In Colombia, only six out of 10 students participated in synchronic activities and four out of 10 took part in nonsynchronic ones such as homework (LEE 2021).

In the short term, education systems can temporarily adapt existing tools to detect students at risk. For example, in Chile, an existing early warning system, Sistema de Alerta Temprana, to detect students at risk of dropping out only at specific grades was extended during school closure to all grades. The tool allowed schools to systematically track student-teacher contacts, continuously updating data and implementing individualized strategies. The system identified two types of groups at risk during the pandemic: students that could not be contacted by their teachers, and students and families in need of specific support (DEG 2020).

Even after schools reopen for in-person learning, school systems should make use of early warning systems to identify at-risk youth as they can be a powerful tool to reduce absenteeism and improve student academic progress and are cost-effective. A pilot program in Guatemala combined student-level information, nudges, support for retention, and short principal and teacher training on how to help students succeed in the transition from primary to secondary school. On average, the intervention yielded a 1.3-percentage-point decrease in students dropping out with an estimated cost of US\$2.93 per student (Haimovich, Vazquez, and Adelman 2021).



Interventions to Prevent Early School Leaving and Promote Education Reengagement

During school closures, teachers and school leaders had less information and fewer opportunities to work with students at risk. Now that schools are reopening for learning and in some countries the health situation is starting to improve, education leaders can implement strategies to reach out-of-school children given the high numbers expected of such students. Such strategies can also attract students who have never been enrolled as well as those who were enrolled and dropped out. Shanker, Marian, and Swimmer (2015) reviewed effective strategies to foster school reengagement, and they suggest a combination of different interventions—from early childhood and readiness programs for vulnerable families to improving governance and management systems. For youth and secondary school students, the report highlights the importance of three interventions: (1) economic incentives (described in detail below in the section “Financial Incentives to Reduce Dropout”); (2) accelerated learning programs (see Table IV.2 and the later section “Adaptive Instruction and Accelerated Learning for All”); and (3) active search strategies for out-of-school students.

For the latter, Shanker, Marian, and Swimmer (2015) note that although the academic literature lacks definitive evidence on the effectiveness of enrollment campaigns, such campaigns have strong potential as a supplement to other initiatives for out-of-school children. These campaigns should include community mapping, partnerships with local organizations, door-to-door visits to persuade parents of the relevance of education, gradual relationship building, and promoting connections with social support. Outreach campaigns should be combined with specific services—including financial and personalized information about the returns and prospects attributed to schooling; opportunities after school completion; and preventive approaches for youth with at-risk behaviors (Busso et al. 2017). For instance, a family-centered intervention in the United States, the Family Check-Up program, trains parents in behavioral management practices. Youth in three public middle schools in an urban area that participated in the program showed better social-emotional skills and attitudes (Stormshak, Fosco, and Dishion 2010).



Argentina is the locus of two programs of interest. In the City of Buenos Aires, the program *Deci Presente* targeted students who did not connect to remote lessons or did not reenroll, providing home visits, specific learning arrangements, tracking of learning progress, and bimonthly pedagogical assessments to design strategies of support.⁵ And in the province of Santa Fe, *Vuelvo a Estudiar Virtual* provides a flexible high school completion option for youth over the age of 18. The program uses a hybrid-education interdisciplinary pedagogical model with hands-on socio-community action projects.⁶

One study found that text message nudges successfully boosted student engagement during the pandemic. In the Brazilian state of Goiás, text messages sent to high school students or their caregivers reduced the incidence of dropout during the lockdown. Motivational nudges were sent twice a week delivering messages of encouragement to comply with academic activities and online attendance during the pandemic. This intervention also led to increased student motivation to return to in-person instruction (Lichand and Christen 2021).

Parental engagement can be an ally in boosting students' academic progress. Delivering information about student performance and attendance to parents and/or students, usually through text messages, can encourage parental involvement in learning activities. Specific advice about how to integrate specific learning activities into daily life plus expressions of accompaniment, reminders, and nudges can foster good study habits. Notifying parents when students miss classes or assignments can have positive effects on test scores among middle and high school students. After a six-month intervention of automated texts to parents about the performance of students in grades 6 through 11 in Los Angeles, students in the treatment group increased their mathematics performance relative to the control group (Bergman 2021). However, this sort of intervention necessitates having an efficient and up-to-date education information and management system (*sistemas de información y gestión educativa, or SIGED*) to collect timely data on student attendance, missed assignments, and learning progress (see Box IV.1). A school system can use such information to provide detailed feedback to students and parents, improve the flow of information between school and parent, and even support transition to college.

5. City of Buenos Aires. www.buenosaires.gob.ar

6. Ministry of Education of the Province of Santa Fe. www.santafe.gov.ar

7. 0.21 standard deviation.



Box 4.1. Education management information systems

The use of technology for the management of education systems is a cornerstone for education transformation. A highly efficient digital education information and management system (SIGED) allows for the collection and use of high-quality data for timely decision making, contributing to efficient resource allocation. At the same time, it can also relieve teachers and principals from administrative tasks and generate school budget savings. Although few impact evaluations are available, evaluations of specific SIGED components have identified positive effects on student dropout and learning (Arias Ortiz et al. 2021a). The use of unique identifiers for teachers, students, schools, and buildings and interoperability of platforms and systems are among the basic components of a high-quality SIGED.

Information systems allow schools to track resources and service delivery, monitor teachers and students, provide personalized training, and offer accountability and feedback at every school level. While effects on educational outcomes may take time to show, providing real-time information on students' achievements to school management staff has shown positive effects in the longer run. In primary public schools in Salta, Argentina, key staff received training on and had access to an online dashboard with which to monitor students' math and reading test scores for two years. Whereas the effects on student performance were negligible during implementation, repetition rates decreased by 1.5 to 3 percentage points and grade progression increased by 1.7 to 2.3 percentage points two years after intervention concluded (de Hoyos, Ganimian, and Holland 2020). An evaluation of diagnostic feedback to primary public schools in La Rioja, Argentina, found improvements in learning. Information about school relative performance led to higher scores in mathematics and reading⁸ as management decisions, instructional approaches, and the relationship between teachers and students were focused on outcomes (de Hoyos, Ganimian, and Holland 2021).

8. 0,33 y 0,36 desviaciones estándar en Matemáticas y Lectura, respectivamente, tras dos años de aplicación.

Using technology to automate data collection and delivery of information can improve cost-effectiveness and affordability (Escueta et al. 2020). In an experiment carried out in 22 middle schools in West Virginia, automated text messages were sent to parents (weekly and monthly) about students' missed assignments, grades, and absenteeism. The messages reduced course failures by 38 percent and improved attendance by 17 percent at a low cost⁹ (Bergman and Chan 2017). In Chile, a similar intervention increased mathematics scores¹⁰ and reduced absenteeism by 1 percentage point among low-income students. Although the effect sizes were small, such an intervention is cost-effective (Berlinski et al. 2021).¹¹



Financial Incentives to Reduce Dropout

Financial support to families conditional on student attendance or educational attainment can foster school attendance and grade progression and in some cases increase learning, particularly in times of crisis. Evidence from Indonesia during the 2008 financial crisis demonstrated that scholarships can serve as a safety net, reducing dropout rates by 3 percentage points among students in lower high school (Cameron 2009). Given that the economic crisis triggered by the COVID-19 pandemic limited countries' capacity to provide new transfers, the approach followed by education systems was to provide adjustments in the design of existing financial support programs, particularly in higher education. Modifications contemplated included reducing or freezing debts (Colombia, Brazil) and extending deadlines to apply for student loans or scholarships (Chile). Peru launched a scholarship program and loans to support student attendance (Arias Ortiz et al. 2021b).

9. The cost of the system and training to implement this intervention at the school level was US\$7 per student and the marginal cost of each text message was less than a fraction of a cent.

10. 0.9 standard deviation.

11. The total cost of a 0.01 standard deviation in math grades was US\$2 per student per year (for a two-year program).



Beyond the context of a crisis, providing financial incentives is an effective tool to promote enrollment and graduation. Both conditional cash transfers and scholarships yield short-run effects on enrollment and retention among students with low socioeconomic status (Rajasekaran and Reyes 2019). Cash transfers tend to be more effective in promoting high school enrollment (a 6.3-percentage-point increase) while scholarships and achievement awards are more likely to yield positive effects on completion (a 5.6-percentage-point increase) (Busso et al. 2017). A voucher-based system targeting low-income students in Colombia reduced grade repetition, increased completion and years of schooling, and modestly improved students' academic performance (Shanker, Marian, and Swimmer 2015).

How financial support is delivered to students matters. Timing, conditionalities, and complementary support affect students' and families' choices. Programs that provide students and their families with financial support throughout the academic year have been found to be less effective than programs that tie the funding to the transition to the next grade or education level (Rajasekaran and Reyes 2019). For example, evidence from a randomized education experiment in Colombia indicated that allocating a fraction of the financial support as a lump sum at the time of reenrollment or providing a large payment upon graduation resulted in increased reenrollment (4 percentage points) and attendance (3 to 5 percentage points) (Barrera-Osorio et al. 2011).



Seize the Opportunity to Digitally Transform Education Systems

The digital transformation of education has enormous potential to foster learning. Technology adoption for learning can enhance both traditional group instruction as well as self-paced learning and more personalized experiences. The use of technology in the school setting also helps overcome capacity constraints to offer support outside school hours and leverage student engagement while equipping youth with digital skills. Throughout the COVID-19 pandemic, a wide spectrum of strategies for remote education were used across countries, regions, and schools within countries, from high-tech learning platforms to printed materials and social media (Mateo-Berganza 2021).

"The digital transformation of education has enormous potential to foster learning."

Yet inequities in the access to and availability of resources for remote schooling exposed and amplified existing gaps across schools and students, both from the demand side (students' access to resources) and the supply side (offer of remote learning), limiting the effectiveness of remote learning strategies. In the case of Brazil, data collected on 71 percent of municipalities found that 40 percent of them were not providing remote education in May 2020, and according to a student survey, 18 percent of respondents were not attending remote schooling in July 2020, and most of those not attending were from low socioeconomic municipalities (Arias Ortiz et al. 2021c). To implement quality hybrid or virtual learning, education systems must supply coherent and well-structured distance or virtual education programs using different channels to reach all students, in particular the most vulnerable. As Chapter II has shown, not doing so can lead to learning losses and school dropout.

The use of educational technology does not automatically benefit student learning; specific policies are necessary to leverage such benefits. First, students need to have equal access to high-quality inputs and connectivity so that gaps between

socioeconomic groups do not widen. Second, course content must be adapted for online learning and be part of an explicit and well-planned virtual or hybrid learning strategy in which student progress and student-teacher interaction is monitored so that the school can offer additional support when needed. Finally, pedagogical practices need to take advantage of the benefits educational technology offers both in the classroom and outside school. If the same pedagogical practices continue to be used, equipping the classroom with educational technology will not improve skills development.

Ensuring Access to Devices and Connectivity

The first step to incorporating technology into the learning process is ensuring access to digital infrastructure and complementary inputs. Access to electronic devices and high-quality internet breaks down student and school isolation, allows teachers to share multimedia content, and opens channels for collaborative interactions in the school community. Nowadays, technology is embedded in most of our economic activities, and thus having access to devices and connectivity is not a “nice-to-have” but a “must-have” if students are to continue with postsecondary education or enter the labor market. But given that disparities in access to technology are correlated with socioeconomic status, the digital divide can replicate and even reinforce existing patterns of segregation.

During the recent pandemic, one of the most used strategies to narrow the digital gap was to provide internet access and distribute devices to schools and students. In past disease outbreaks across the world, the provision of digital devices and free high-speed broadband packages was found to have positive effects on keeping students connected to education services (Hallgarten 2020). Similarly, distributing a tablet with preloaded content and software to track student progress in seven countries in conflict zones (Haiti and six African countries) had positive effects on teaching and the participation of children and parents (Moon et al. 2016). A recent study found that living in neighborhoods with better broadband technology was associated with higher grades among students who had switched from in-person to online schooling during COVID-19 lockdowns in the United States (Altindag, Filiz, and Tekin 2021).



Building infrastructure to increase connectivity is a long-term investment whose effects can take years to reach students and schools. In the short term, a coordinated effort and strong policy response can help reduce disparities in connectivity among students in the context of school closures. Some governments in the LAC region have negotiated special arrangements to ensure internet access for students and teachers. In Argentina, Belize, Chile, Colombia, and Costa Rica, the agreements resulted in free access to educational portals and platforms. In Jamaica, discounted data consumption rates were given to teachers and conditional cash transfer beneficiaries. Uruguay fully subsidized the connection tariff for vulnerable households. In addition, Uruguay has optimized the virtual classroom—the *Contenidos y Recursos para la Educación y el Aprendizaje*, or CREA—so that videoconferences can be held and people can participate without consuming data. This was made possible because videoconference servers were installed under Uruguay's Plan Ceibal, and the related traffic is local.

Multichannel or free connectivity approaches help close the digital divide. The Kolibri pilot implemented in Intibucá—a highly deprived region with low connectivity in Honduras—provided tablets with preloaded content covering four subjects to students in grades seven to nine and teachers during the pandemic. This intervention included training teachers to follow students and deliver individualized content based on student progress for one and a half months of remote schooling. Such strategies can include packing and distributing printed material in the absence of internet access, adapting materials to specific student needs, broadcasting prerecorded modules by radio or TV, distributing radios, hosting learning materials on accessible web portals, and visiting students regularly to provide support with remote instruction. For instance, in Belize, which is home to many Spanish-speaking immigrants, tablets provided to vulnerable students during the pandemic came with the Duolingo application to facilitate the English-language learning of immigrant students (Arias Ortiz et al. 2021a). In countries affected by Ebola outbreaks, radio broadcasts helped preserve students' connection to education, and effects on learning have been associated with tailor-made content and involvement of local organizations (Hallgarten 2020). In Sierra Leone, education continuity in remote locations was ensured during the Ebola outbreak through radio transmissions and distribution of radios among group facilitators and teachers (Barnett et al. 2018).

Although important, access to connectivity and devices is not a sufficient input for learning. Evidence from randomized controlled trials shows that access to digital devices or the internet by itself without any pedagogical intervention does not improve learning in core subjects but does increase computer usage and improve computer proficiency (Escueta et al. 2020). The effect of simply replacing traditional inputs (books and blackboards) with educational technology is often neutral and can even be adversely associated with learning outcomes (Bulman and Fairlie 2016). Findings are similar for the provision of computers and connectivity at home. The distribution of free home computers with subsidized dial-up connectivity to students in grades 6 to 10 in California increased computer use but had no impact on academic outcomes such as test scores, grades, attendance, and disciplinary actions (Fairlie and Robinson 2013). At the secondary level, government provision of computers in California resulted in a modest but significant decline in mathematics test scores (Vigdor, Ladd, and Martinez 2014). Similar results



have been found in Latin America. Evidence on providing free laptops with high-speed internet access to students in grades three to five in low-achieving public schools in Peru had no effect on student achievement in mathematics, reading, cognitive skills, self-esteem, and grades (Malamud et al. 2018). Studies focusing more specifically on access to connectivity find similar results. An assessment linking student test scores with differences in the broadband connection speeds in students' homes in England found zero effects on test scores and no significant effects on time and productivity of the time spent studying (Faber et al. 2015). Thus, the use of technology in education should leverage the comparative advantages of technology and be implemented with a shift to high-quality content for digital learning and an evidence-based pedagogical model.



Content for Online Learning and Monitoring Student Progress

If it is to have the desired impact on learning, technology needs to be complemented with high-quality content for the digital environment, clear guidelines and learning objectives, and, most important, teacher training and support in the use of effective pedagogical practices. A meta-analysis of educational technology programs at the primary level showed that “guided-use” technology programs yield positive average effects on standardized tests (Arias Ortiz and Cristiá 2014).¹² Guided-use technology programs are those that define the three Ss—specific subject, software, and schedule—for which the technology will be used in the classroom, with all components (materials, teacher training, etc.) oriented and adapted to them. Technology adoption under guided-use programs can be as effective on student academic performance (or even more) than other powerful educational interventions such as teacher training or class size interventions.



Thus, guided-use technology programs need to be carefully planned, designed, and implemented to produce effects on learning. However, in the context of the pandemic, teaching and learning moved very fast into a state of “emergency remote teaching,” which is different from a well-planned online education platform that relies on a systematic approach and clearly defined teaching methods and standards (Hodges et al. 2020). Evidence shows that education systems in LAC were not well prepared for the transition to online learning as only a few countries had adequate baseline conditions such as digital learning platforms, content repositories, or virtual mentoring (Álvarez Marinelli et al. 2020).

¹². Impacts range from 0.15 standard deviation in language to 0.18 in math, figures substantially above the effects of nonguided interventions (0.02 and 0.07 standard deviations, respectively).



Lessons from the past two years show that recreating the school learning environment in a virtual or hybrid modality requires accessibility, curated content, systematic school-home communication, and pedagogical models for online learning. One-stop-shop sites of instructional content are more effective to facilitate learning when made accessible through different devices such as mobile phones and computers (Arias Ortiz et al. 2020). In France, the teacher-and-student platform for remote learning successfully consolidated synchronous/asynchronous learning activities and materials corresponding to each grade level. This is an excellent example of how to consolidate content in one easy-to-access digital location. In addition, remote learning needs to allow for an appropriate monitoring of student-teacher interaction and learning, using tools such as formative assessment. This type of assessment is critical for monitoring student progress and planning individualized targeted activities through low-stakes timely assessment tools (UNESCO, 2021)¹³. Formative assessments can be conducted through face-to-face observation, pencil-and-paper assignments, or online. Although face-to-face observation is the most used formative assessment methodology in normal times, during the pandemic education systems increasingly deployed online formative assessment. For example, the United Arab Emirates applied an online smart evaluation system to track student performance across public and private schools. In Chile, the Ministry of Education created a platform **Diagnóstico Integral** that provides tools for teachers to assess and monitor student progress in mathematics, reading, and social-emotional skills at three different times during the academic year.

A large body of pre-pandemic evidence shows that the combination of virtual and in-person learning, called hybrid or blended learning, can be effective and generate higher levels of learning for students than distance education (Elacqua et al. 2020). At the tertiary level in particular, hybrid learning can be as effective as in-person learning as students seem to achieve similar levels of learning.¹⁴ However, the results also show that the use of technology can increase learning gaps. To prevent gaps from widening, in addition to ensuring access and developing quality online content, the evidence suggests ensuring that both teachers and students are prepared for online learning with the necessary digital skills to take advantage of distance learning and that students with the greatest difficulties have access to additional support.

13. For other references visit the [Council of British International Schools](#).

14. The authors highlight that most of the literature focuses on higher educational levels and in the United States, which prevents one from assuming that distance and hybrid education would generate the same results in Latin America and the Caribbean.



Evidence on the use of educational technology in Pakistan suggested that gains from e-learning were achieved only when teachers remained at the center of the learning process. The combination of multimedia materials and teacher-led activities in middle school classrooms generated improvements in math and science scores.¹⁵ However, when content and activities were delivered through tablets for independent learning, scores decreased.¹⁶ The fixed costs associated with content development decreased substantially when the intervention was brought to scale, from US\$31 per student when implemented in 100 schools to US\$20 when the number of participating schools doubled. The cost-effectiveness also improved when teachers used preloaded content to interact with students in classrooms compared with students using content independently on tablets. In the latter case, the cost per student increased to US\$130 (Beg et al. 2019).



Finally, it is critical to note that a virtual learning **environment exposes students and teachers to risks related to the use and protection of sensitive information.** Cybersecurity incidents in schools reached record levels in many school systems during the pandemic. Indeed, schools have been one of the preferred targets of cyberattacks. Reported incidents in the United States—most related to data breaches and leaks—increased by 18 percent in 2020 compared with the previous year (Levin 2021). In a context where student records, attendance reports, test scores, and interactions with teachers—including personal images—are being digitalized and stored at an unprecedented scale, the relevance of data privacy and security standards must be tackled. Education authorities should (1) define protocols for data collection, use, and sharing; (2) update data privacy laws to establish the scope of digital platforms; and (3) provide clear guidelines and training for students, teachers, and school coordinators to prevent incidents (Del Pozo et al. 2021). However, this should be done with care so as not to prevent the adoption and use of technology, especially by low-income children, whose families may be lagging in digital skills levels.

15. 0.3 standard deviation.
16. 0.4 standard deviation.



Pedagogy for Quality Distance Learning and Tailored Instruction

As the pandemic-induced transition from in-person to virtual learning got under way, the first reaction was to reproduce, as much as possible, teaching practices used in the classroom. But online **learning requires adapting not only content but also pedagogy to a virtual environment**. Available data analyzed by one recent study suggest that attending a virtual school very likely led to a reduction in test scores among elementary and middle school students in mathematics, science, social studies, and English language arts (Bueno 2020). Other studies have found that virtual instruction is as effective as face-to-face education. For example, evidence on the effects of virtual algebra and English courses on high-school student achievement in Florida showed no difference in performance compared with face-to-face instruction (Schwerdt and Chingos 2015).

Likely the negative impact of virtual education in some education systems stems from the use of pedagogical models not well adapted for the online classroom. The pedagogical approach to online teaching matters for student performance and should consider (1) the type of interactions and student support it requires, (2) the type of remote learning implemented (synchronous vs. asynchronous), and (3) how technology is used to support targeted instruction.



First, evidence shows that effective methods of conducting activities online—such as using interactive learning technology and implementing activities that engage students and foster two-way communication—contribute to better educational outcomes (Bernard et al. 2004). Enhancing pedagogical approaches to engage students also includes disseminating content with planned peer interaction through small group activities and projects. When teaching encourages students' active engagement, learning loss due to school disruption could be minimized. An assessment of learning loss in a set of U.S. college courses found smaller drops in scores when teaching methods applied during the pandemic semester emphasized peer interaction (thinking in pairs) and small group activities in synchronous online courses (Orlov et al. 2020).

17. From 0.1 to 0.4 standard deviation.



Supporting teachers in their access to instructional resources, organizational procedures, and training for the management of remote learning is also key. A myriad of experiences illustrate how countries have favored knowledge exchange among teachers. For example, in Korea, Ukraine, the United States, and the United Kingdom, communities of practice were promoted through websites or platforms where teachers exchanged content and practices (OECD 2021). Parents may supplement virtual learning at home if they receive adequate support. An assessment of guidance provided to parents in Botswana via regular text messages and phone calls on applying learning activities at home found that mathematics scores increased among primary school students. The intervention was considered cost-effective¹⁸ relative to the literature mean and compared with tutoring, as it yielded a similar impact at a substantially lower cost (Angrist, Bergman, and Matsheng 2021).

A second aspect to consider regarding online teaching tools is how to combine synchronous and asynchronous learning based on their respective pedagogical advantages and disadvantages. On the one hand, synchronous hybrid learning models entailing interaction between on-site and remote students require the convergence of real-time interactions between students and teachers and among peers showing diverging levels of engagement. Under synchronous hybrid models, remote students tend to display relatively lower levels of learning and increased passivity due to monologue-based teaching strategies or difficulties in teachers' knowing when to intervene (Raes et al. 2019). On the other hand, an asynchronous learning environment, whereby instruction is not delivered in person or in real time, offers the flexibility for each student to learn at their own pace through guidelines to explore online sources, but such an environment might undermine students' engagement in the absence of motivation and autonomous learning skills. To address the paucity of evidence on virtual education, there is an urgent need for pedagogical models specifically designed for the online learning experience. This must entail adapting content, concepts, learning milestones, and instructional practices. Later we describe teacher professional development for hybrid learning in the section on education transformation.

Finally, one of the more important advantages of technology-based learning is that it facilitates instruction tailored to individual students' needs and performance levels. Teachers often struggle with the challenge of teaching at the right level, especially in large classrooms, but technology offers the possibility to simultaneously teach for heterogeneous learning levels (Escueta et al. 2020). Tailored instruction has been defined in the education literature over the decades variously as personalized, differentiated, or individualized instruction (Bray and McClaskey 2013). In practice, the three approaches are frequently referred to indiscriminately, but it is helpful to understand the differences as each approach can address different education challenges and learning needs. Personalized instruction is centered on the learner with different learning goals for each student based on personal interests and preferences. The approach is suited to foster independent learners. In the differentiated approach, the learning goal is the same for all students but the method is adapted to the needs of each one through formative assessments. Similarly, in individualized instruction, the learning goal is the same for a group of learners, but the specific objectives and pace of instruction is adapted to individual learning needs by providing just-in-time explicit instruction and scaffolding to support struggling learners. Both individualized and

18. 0.12 standard deviation per US\$100.



differentiated instruction are suited for accelerated learning approaches that help students master grade-level content. As Table IV.2 illustrates, technology can help in all three types of tailored instruction either by using specific types of tools for each group or individual or by allowing students to advance at their own pace.

Table 4.2.

Personalization versus differentiation versus individualization chart

Personalization	Differentiation	Individualization
Starts with the student.	Starts with a group of students.	Starts with the need of an individual student.
Connects with personal interests, passion, and aspirations.	Adjusts to the learning needs of a group of learners.	Accommodates the learning needs of the individual.
Learners get a learning plan based on how they learn and their interests.	Teachers create or adapt instruction and choose roles for students based on different needs of students.	Teachers customize lessons and tasks for students based on individual needs, providing just-in-time explicit instruction and scaffolding.
Different objectives for each student.	Same objectives for a group of students.	Same objectives for students with specific objectives for individuals that receive one-on-one support.
Students select appropriate technology and resources to support their learning.	Technology and resources are selected to support the learning needs of groups of students	Technology and resources are selected to support the learning needs of individual students.
Supports creative thinking and initiative, often including cognitive skills. Suited to foster independent learners.	Supports mainly cognitive skills. Suited for accelerated learning approaches.	Supports mainly cognitive skills. Suited for accelerated learning approaches.
Students develop the capacity to set goals and reflect on their own learning. Often combined with some summative assessments.	Formative testing to provide feedback and ensure progress.	Summative grade-based assessments to ensure that the student develops the skills of the formal learning plan.

Source: Adapted from Bray and McClaskey (2013).



Technology supports the delivery of targeted content and individual feedback by countervailing the effects of teaching to the middle student. **By digitalizing the content, school systems can provide personalized, differentiated, and individualized instruction at a lower cost.** Computer-assisted learning, traditionally associated with differentiated learning, has been evaluated rigorously and has shown enormous promise in improving academic achievement, especially in mathematics (Escueta et al. 2020). The basic idea of computer-assisted learning is the use of specific educational packages that adapt the instructional process to manage the transition from basic to more advanced concepts once core learning has taken place; the process can make use of light-touch homework support tools as well as more intensive interventions that reorient the classroom around the use of software.

When using technology in the classroom, teachers need to manage time use during school hours and at home, determine the amount of time allocated to digital platforms, and bridge these activities to what is being taught in class. Teachers may need support on how to leverage students' performance data generated by the platform to adjust education delivery accordingly. Thus, interventions that focus on training teachers on individualized instruction, enhancing career development, and strengthening student monitoring are among the most cost-effective interventions in education initiatives (Angrist, Bergman, and Matsheng 2020).



Addressing Learning Loss

Learning in the LAC region was already in crisis prior to the pandemic, and the social-distancing-induced school closures served to deepen existing inequalities. As discussed in Chapter 1, despite tremendous progress in terms of access, students in the region had low pre-pandemic learning levels, with many leaving the school system without completing high school and facing limited employment prospects. Whereas safely reopening schools and reengaging students is instrumental in stemming social and cognitive learning losses, education systems face the challenge of finishing the unfinished learning that is the result of prolonged school closures. Additionally, the present crisis offers a leapfrog moment to transform LAC education systems.



Finish the Unfinished Learning

As Chapter 2, **described, school closures in response to the COVID-19 pandemic disproportionately affected vulnerable students, increasing learning gaps.** As schools reopen, schools, principals, and teachers face the dual challenge of improving learning for all and closing learning gaps. In the face of learning loss on a massive scale, the go-to approach of grade repetition is not feasible. Grade repetition could even widen learning gaps as students from socioeconomically advantaged groups would progress while their peers from disadvantaged socioeconomic groups (who had less access to learning from home resources during the pandemic-induced school closures) would be left behind. Students who are held back without additional support risk falling behind and staying behind, with delayed school completion; moreover, decades of research warns that grade retention increases a student's risk of dropping out of school. The following evidence-based strategies on what works in skills development are drawn from the fields of education, neuroscience, and behavioral economics.



Development of a Learning Recovery Plan

We need a systematic and evidence-based approach if we are to effectively address the pandemic learning slide. Internationally, high-achieving education systems have designed detailed learning recovery plans that ensure consistency among content coverage, student achievement, learning objectives, and instructional strategies. The first step to such a plan is to map, at each grade level and in every subject area, the content covered in practice throughout the prolonged school closures. In doing this exercise, one of the highest-achieving school systems in the United States concluded that the content covered in practice was as low as 40 percent in mathematics at several grade levels. Factoring in the online attendance rates, the de facto delivery of the curriculum was of course even lower. In Europe, during online schooling teachers were found to have reduced curriculum coverage to avoid components they found hard to teach remotely, particularly those requiring relatively more interaction among teachers and peers (Carretero et al. 2021).

A second essential ingredient in a learning recovery plan is assessment of student achievement. Most countries in the region postponed or canceled 2020 national assessments with only a handful (Brazil, Colombia, and Dominican Republic) conducting national testing. Some countries, such as Peru and Mexico, shifted from universal testing to monitoring of learning in a sample of students through online assessments (UNESCO 2020). In addition to the relaunch of the national summative assessments that countries administer at select grade levels, education systems need to swiftly conduct diagnostic testing in core subjects at every grade level to identify learning gaps. Having identified gaps in terms of both content offered during the pandemic and learning achieved, education systems will be ready to design their learning recovery plans.

Whereas the path to addressing the pandemic achievement slide can vary across education systems, pedagogy must be at the center of any learning recovery plan. The go-to approach for students who lack core skills has typically been remediation, which at its most basic level means teaching the same content that the child failed to master the first time, sometimes by repeating an entire grade level. However, results have been mixed. Instead, in recent years accelerated learning and adaptive instruction techniques have gained traction internationally.

Adaptive Instruction and Accelerated Learning for All

The accelerated learning approach is used when students lack mastery of core skills they need to comprehend upcoming grade-level content and skills development. Accelerated learning is not rushing through the entire grade level. Instead, accelerated learning focuses on the precise core skills that a student must master to handle grade-level instruction in a specific unit. Sometimes acceleration means going slower. For example, an eighth-grade linear equation unit may take 30 instead of 20 lessons to allow for just-in-time support and scaffolding for the development of essential skills needed to reach the grade-level learning goals.

With adaptive instruction, educators can begin to tackle vast learning gaps of an entire generation of students. A typical classroom is made up of students with different learning needs. Adaptive instruction encompasses approaches that allow the teacher to provide individualized support to students based on learning needs. In a classroom with many students, adaptive instruction often comprises two key components: first, continuous formative assessment in the classroom to monitor student progress through quizzes, observation, and diagnostic tests, and second, based on the formative assessment, instructional grouping within the classroom so as to bring together students with similar learning needs for a short period of time to focus on the mastery of concepts at the precise level of the group. At other times, the same teacher can use instructional grouping to create cooperative groups consisting of students of diverse ability levels to foster peer tutoring or teamwork. Contrary to long-term ability grouping, which has been associated with adverse effects, instructional grouping has had positive effects on learning (Anderson 2007; Tomlinson 2001; Buttaro and Catsambis 2019). Whereas instructional grouping within the classroom is used widely in high-achieving education systems, it is used less often in the developing country context. One version of instructional grouping is the Teaching at the Right Level (TaRL) approach developed in India, which led to improvements in learning by providing instruction tailored to the needs of each group of students. Likely in response to limited teacher skills, India's TaRL model is based on additional instructors that teach each group of students, with important cost implications (Banerjee et al. 2007, 2016, 2017). The training of teachers to manage instructional grouping in classrooms, where the teacher supports one group while other groups progress independently, is likely more scalable in LAC. Such a setup could, for example, be modeled on high-achieving education systems in the United States, where instructional grouping within the classroom is used extensively.



Supplemental Academic Support

In addition to pedagogical change within the classroom, to close pandemic achievement gaps, learning recovery plans should include supplemental academic support based on individual student needs. During the pandemic, most LAC countries¹⁹ opted to promote students automatically to the next grade level.²⁰ The literature is in agreement that such automatic promotion should be a temporary measure and requires continuous formative assessments and targeted support to ensure that students master key concepts they need to succeed at the next grade level. Such supplemental academic support can take different forms, such as academic support centers, summer break programs, and tutoring.

Academic support centers. In the City of Buenos Aires, Argentina, the Ministry of Education created specific centers to support students who had been automatically promoted to the next grade level called Centros de Acompañamiento a las Trayectorias Escolares. Schools identify students in need of support and provide targeted support during weekends with scaffolding to help students master key learning concepts. The support centers coordinate closely with schools to monitor progress.²¹

Weekend and summer academies. Reinforcement academies held during school breaks or on weekends through the academic year can foster student engagement in the learning process (Allensworth and Schwartz 2020). A meta-analysis of mathematics summer learning academies found an increase in academic achievement among low-income students from preschool through 12th grade in the United States (Lynch, An, and Mancenido 2021). Additionally, a meta-analysis of science, technology, engineering, and math (STEM) summer bridge programs for students transitioning to higher education found a 64 percent higher likelihood of first-year retention and a higher grade point average among participating students compared with their peers (Bradford, Beier, and Oswald 2021). Weekend and summer academies can be done virtually, as is the case in a U.S. national summer school initiative, which provides mathematics and reading activities by Zoom (Schueler and West 2021).

19. Argentina, Belize, Bolivia, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, the Dominican Republic, and Suriname.

20. The impacts of massive-scale automatic promotion of students regardless of performance are unknown. Limited pre-COVID-19 evidence of automatic promotion shows mixed effects on academic achievement. While the education literature generally reports positive effects on learning from automatic promotion, largely attributed to the stigma of grade retention, reduced motivation, and impaired ability to relate to peers (Okurut 2015), some studies show adverse effects, particularly when automatic promotion is done without providing targeted support to ensure that students can access grade-level content. For example, automatic grade promotion when done in primary education in Brazil reduced mathematics scores (Foureaux Koppensteine 2013).

21. Centros de Acompañamiento a las Trayectorias Escolares," www.buenosaires.gob.ar



Tutoring. Emerging evidence suggests that intense in-person tutoring is a key intervention to stem student learning loss. Individualized attention to academically struggling students helps address bottlenecks, provide scaffolding, and reinforce communication channels to provide timely feedback (Allensworth and Schwartz 2020). The literature provides insights for designing tutoring programs. When paraprofessionals provide mathematics tutoring, learning improves up to two additional years in a single academic year. Such outcomes are better than when tutoring is developed by parents or volunteers. Additionally, tutoring provided during school hours delivers better outcomes than after-hours tutoring (Nickow, Oreopoulos, and Quan 2020). Tutoring’s impact is enhanced when it is delivered by professional mentors who establish a strong relationship with the student (Rajasekaran and Reyes 2019).

Although tutoring can be effective, in-person one-to-one tutoring has a high price tag. Amid the pandemic, the high numbers of students in need of supplemental academic support could make tutoring too costly and infeasible to implement for fiscally strapped LAC countries. However, design adjustments can improve the cost-effectiveness of tutoring interventions, including increasing the group size, recruiting and training volunteer tutors, and use of technology. Recent evidence shows that moving from a one-to-one tutoring model to one tutor with two students preserves positive effects on learning (Robinson et al. 2021). In Peru, small group science tutoring improved learning among boys²² but not among girls (Saavedra, Näslund-Hadley, and Alfonso 2019). This could stem from preferential treatment of boys by tutors or from boys monopolizing small group work in science (Beuermann et al. 2013), suggesting that care must be taken to ensure that all students benefit when adopting small group tutoring models.

Some tutoring alternatives piloted during pandemic-induced school closures show effectiveness at a reduced cost. In Italy, university students were recruited as volunteer tutors for three to six hours per week, generating improvements in academic performance of middle school students from socioeconomically disadvantaged households (Carlana and La Ferrara 2021). Similarly, a recent evaluation of a tutoring program for high school students in Spain amid the pandemic, “Menttores,” found a 17 percent increase in mathematics scores and an 8.9-percentage-point reduction in repetition rate, among other educational and social-emotional outcomes. This intervention, carried out in schools from poor neighborhoods, provided online tutoring to students in pairs over eight weeks to reinforce mathematics content and social-emotional strategies related to motivation and study routines (Arriola et al. 2021).

22. 0.22 standard deviation.



Increased Instructional Time

In response to pandemic-related learning loss, many LAC education systems modified the academic calendar, extending the school year to allow more time for distance learning.²³ However, the evidence on increased instructional time is mixed, particularly in terms of cost-effectiveness.

One can increase instructional time by extending either the school day or the academic year. In some contexts, extending the school day has had positive effects on learning outcomes, but the effects are low on average and heterogeneous across groups. In Colombia, test scores among fifth- and ninth-grade students increased²⁴ in full-day schools relative to half-day ones (Hincapié 2016). Extra school hours in low-achieving secondary schools in Italy yielded improvements in students' mathematics scores (Battistin and Meroni 2016). Similarly, full-school-day programs in Chile led to increases in mathematics and language scores, with particularly stronger results among students in rural areas, in public schools, and among high-performers (Bellei 2009). Despite these positive effects of longer school days, the resources required are substantive as it usually involves the expansion of school infrastructure. Moreover, when the quality of instruction is low, it makes little sense to expand learning time. Other interventions, such as teacher training, may deliver comparable impacts on learning at a lower cost (Holland, Alfaro, and Evans 2015).

Similarly, extending the school calendar has delivered positive effects, but the cost-effectiveness is debatable. Extending the school year by 10 days resulted in higher math and reading scores, particularly among low-performing students, in North Carolina schools. However, a reduction of absenteeism was found to potentially lead to even larger improvements in academic performance (Aucejo and Foy Romano 2016). That finding highlights the efficiency of the previously described student reengagement interventions targeting absenteeism among low-performing students versus universal interventions that include both high- and low-performing students. More research is required to explore the precise conditions and student populations that make expanding instructional time cost-effective. In addition to effects on learning, such analyses should encompass other outcomes related to the reduction of time spent without adult supervision, including improved risk aversion (Machin, Marie, and Vujié 2011) and reduced teenage pregnancy (Sánchez and Favara 2019).



23. For example, Costa Rica added an additional four weeks to the 2021 school year. In Argentina, the national education ministry authorized provinces to add three to four additional weeks to the 2022 school year.

24. 0.1 standard deviation.



Caregiver Engagement

Research shows that caregiver engagement increases student achievement. Most LAC schools and school systems have no tools for caregiver engagement and may worry about adding additional tasks to already overstretched human resources. But caregiver engagement does not have to be complicated to be effective. During the pandemic, interventions as simple as text messages sent to caregivers had impacts on learning. In Brazil, nudges sent via texts to caregivers increased mathematics and language achievement of students²⁵ (Lichand, Christen, and Egeraat 2022). In Costa Rica, similar text-based nudges sent to caregivers improved student cognitive skills²⁶ (Hernández-Agramonte et al. 2022). When cellphone coverage is limited, nudges can be sent by mail. In the United States, five postcards to caregivers with information about the importance of school attendance boosted attendance by an additional half day per academic year (Rogers and Feller 2018). An excellent starting point for incorporating nudges or other caregiver engagement strategies into a learning recovery plan is the Dual Capacity-Building Framework for family-school partnerships developed by the American Institutes for Research (Mapp and Kuttner 2013).²⁷



25. 0.19 standard deviation.

26. 0.12 standard deviation.

27. Southwest Educational Development Laboratory (SEDL) merged with the American Institutes for Research in 2015.



A Leapfrog Moment to Transform Education

A changing labor market exposes shortages in the skill set of the labor force. The demand for skills is transforming and leaning toward specific cognitive and noncognitive skills such as mathematical reasoning, complex problem-solving, creativity, interpersonal skills, ICT literacy, active learning and listening, resilience, and critical thinking (WEF 2020). Unfortunately, education systems have not evolved fast enough to fulfill the labor market's changing human capital requirements. As a result, the share of employers reporting skills mismatches between labor demand and supply has substantially increased in recent years. As many as 7 out of 10 employers report a mismatch between the skills they need and those that the region's education systems focus on (Manpower 2021). As a result, firms struggle to fill vacancies and students battle with the transition to the labor market.



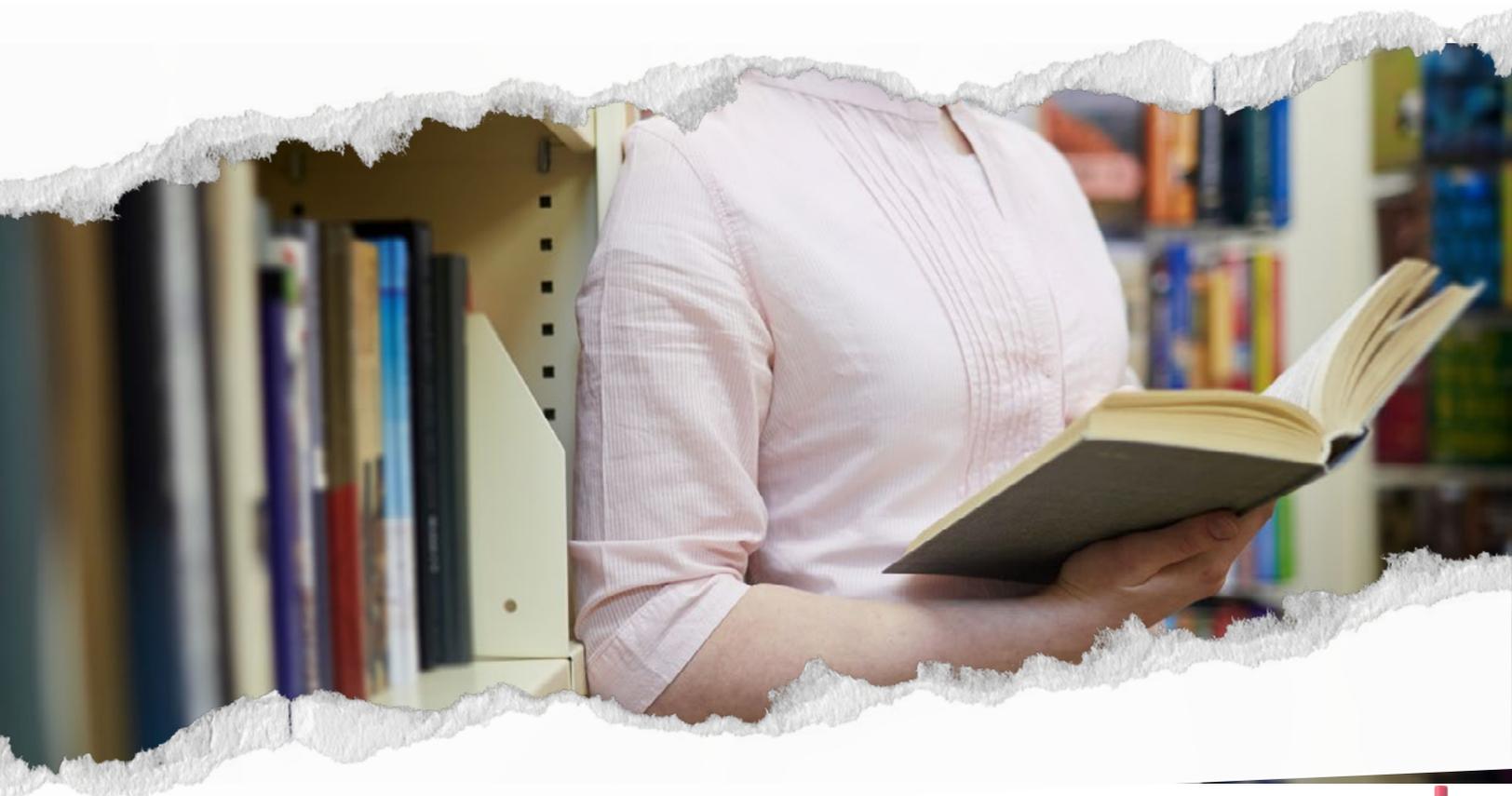
The skills mismatch problem stems from education systems that were conceived more than a hundred years ago, before neuroscientific advances about how we learn. Even given the advances in the LAC education discourse on curricula and learning plans, pre-pandemic classrooms were often still focused on drills, practice, and memorization with few opportunities for evidence-based instructional experiences, such as interactive student-centered discovery and problem-based learning (Näslund-Hadley, Loera, and Hepworth 2014). During the pandemic, the focus was squarely on the transmission of content, further deteriorating the quality of instruction, reversing the region's incipient but hard-won progress toward pedagogical approaches centered around project group work, collaboration, exploration, and critical thinking (Villegas-Reimers et al. 2022). The low quality of instruction is further compounded by frequent curriculum overload, which stretches instruction time and negatively affects students' learning. Covering broader content competes with deeper learning. It discourages content engagement and reflection among students, incentivizing bad study habits like memorization over richer understanding and higher-order thinking (OECD 2020). Moreover, teachers who are overwhelmed by laundry-list curricula may implement poorer instructional practices and bias instruction time toward topics covered on high-stakes examinations (van der Embse et al. 2017).



Against this background, the pandemic-induced disruption of LAC education systems has a silver lining. It offers a rare leapfrog moment to transform education. To transition from curriculum overload to deep learning. To substitute memorization for evidence-based pedagogical practices. And to move from a skills mismatch to a smooth school-to-work transition.

Curriculum Redesign

To improve learning, the literature supports moving away from the coverage of broad content toward deeper learning. Assessment of performance among college students in introductory science courses in the United States identified academic advantages for those who had covered at least one topic in depth during high school in comparison with those students who had covered broader topics without going in depth in any of them (Schwartz et al. 2009). By suppressing curriculum overload, redesigning curricula, and implementing mechanisms for continuous curriculum adaptation, LAC education systems can both foster learning and better equip students to be more resilient to address future changes in labor demand (OECD 2018). By prioritizing key content and skills, curriculum redesign can also help reduce the gap between the intended and implemented curricula. The set of strategies for curriculum renewal contemplates removing duplication of content across subjects and grades, planning learning progression over grades and education levels, and defining a core and reduced number of topics through learning areas or big concepts (OECD 2020). The most effective approach to curriculum reform is a bottom-up approach where teachers assume a central role and stakeholders are timely involved as drivers of curriculum change (Gouëdard, Pony, and Viennet 2020).



Evidence-Based Pedagogical Practices

Meta-analyses indicate that pedagogical approaches that focus heavily on traditional lecturing with passive listening are not conducive to learning (Bligh 2000; Bruns and Luque 2015). Instead, **pedagogical approaches that center on group work and interactive dialogue are strongly associated with greater student achievement** (Freeman et al. 2014). There are various such student-centered pedagogical approaches that can help improve student outcomes, often in combination with elements of explicit instruction to provide just-in-time support to individual students when required. In LAC, one of the most rigorously evaluated such approaches is the inquiry- and problem-based pedagogy (IPP), which allows students to learn by collaborating in solving real-life problems, developing explanations, and communicating ideas (Hmelo-Silver, Golan Duncan, and Chinn 2007).

Ten LAC field experiments of the IPP approach increased mathematics and science learning across grade levels and geographic, cultural, and language contexts²⁸ (Bando, Näslund-Hadley, and Gertler 2018). Key elements of each lesson were (1) organization around core concepts that extend over many lessons, (2) lesson structuring around inquiry and problem-solving opportunities, and (3) teachers trained to provide just-in-time support through scaffolding and explicit instruction to individual students. In the IPP approach, the focus on conceptual problem solving still requires some memorization and procedural fluency (Näslund-Hadley and Bando 2015). The per student cost of increasing learning by 0.10 standard deviation in mathematics was US\$14.53 (ranging from US\$6.9 to US\$22.48) and in science, US\$14.64 (ranging from US\$8.4 to US\$17.52).

Teacher professional development must be at the heart of any pedagogical change process. A review by Darling-Hammond and colleagues (2015) of 35 teacher professional development programs identified seven elements essential for affecting student outcomes. First, professional development should be content specific, with the teaching pedagogy based on actual content. Ideally, the content used in the learning process should be aligned with school system curricula in, for example, mathematics, science, and literature. Second, learning should be active, including inquiry and reflection. Third, teachers should have opportunities to collaborate with each other to discuss experiences with the implementation of lesson activities and provide feedback to one another. The fourth element is the modeling of effective instructional practices. The modeling can be done as a demonstration lesson during a visit by an instruction coach to the teacher's classroom, by video, or by observation of lessons given by other teachers. Fifth, coaching should be an integral part of professional development. Coaching can be provided in the classroom or online. Sixth, there should be continuous feedback and opportunities for teachers to reflect individually and with peers on their own teaching practice and others'. Finally, the training must be sustained over time with recurring learning opportunities through coaching, workshops, and engagement online or in person. Effective professional development programs had between 24 and 49 hours of training.

28. 0,16 desviaciones estándar en Matemáticas y 0,18 desviaciones estándar en Ciencias.



The previous section on educational technology foreshadowed the need to train teachers in remote and hybrid teaching modalities, both synchronous and asynchronous. We believe Darling-Hammond's seven essential elements for effective teacher professional development need to be expanded. Villegas-Reimers and colleagues (2022) propose teacher professional development for hybrid education to (1) allow teachers to reflect on the aim of using educational technology, as well as on their own preconceptions and beliefs about hybrid education; (2) ensure that teachers have the digital competencies to smoothly implement a remote or hybrid lesson; (3) help teachers develop the competencies required to use technology pedagogically; and (4) prepare for pedagogical competencies for significant learning in a hybrid remote and modalities.



School-to-Work Transition

In addition to fostering the development of relevant content and skills, it is necessary to implement strategies that help students transition successfully to the labor market. For example, giving students accurate information about future returns translates into better educational outcomes (Murnane and Ganimian 2014). Information asymmetries penalize low-income families, perpetuating disadvantages and limiting their investments in human capital. Providing eighth-grade students in the Dominican Republic information about how wages relate to different levels of education led to increases in years of schooling (Jensen 2010). In Chile, providing information about earnings associated with different careers increased the demand for college scholarships with higher returns particularly among vulnerable students (Hastings, Neilson, and Zimmerman 2015). Additionally, information on college financing options in Chile resulted in increased high school enrollment of vulnerable students in college preparatory courses. The cost of the intervention was US\$13 per student and would decrease to US\$0.26 when scaling up the intervention nationwide (Dinkelman and Martínez 2014). The evidence also suggests that when parents learn about the benefits of educational trajectories, both attendance and academic scores improve. Thus, providing information on college returns and costs to parents in the United States increased children's intended college attendance²⁹ (Bleemer and Zafar 2018). Similarly, other studies have shown that an effective way to deliver information and expand the aspirations of students is to share the successful educational experiences of role models from a similar socioeconomic background (Bernard et al. 2014).

29. 0.2 standard deviation.



Development of practical skills. Another strategy to develop practical skills and to foster better performance and graduation outcomes is combining in-class and practical training. There is evidence on how technical and vocational education training improves youth labor market outcomes in low- and middle-income countries (Tripney and Hombrados 2013; Elacqua et al. 2019). The inclusion of technical education at the high school level seems to foster educational achievement. Evidence from Massachusetts shows that, compared to high schools, regional vocational and technical schools led to higher graduation rates. The effect is economically significant and amounts to 7 to 10 percentage points among higher-income students (Dougherty 2018). Relative to academic schools in Pernambuco, Brazil, technical schools have shown lower dropout rates and no differences in test scores (Elacqua et al. 2019).

Alternative careers to college. Finally, expanding alternatives to acquire practical skills post-secondary graduation may postpone early participation in the labor market, increasing returns prospects. After completing high school, some students would benefit from short-cycle programs to improve their employment prospects in comparison to the earnings they could obtain with only a high school diploma or an incomplete university degree. The availability of modular, flexible, and integrated programs that combine both technical and social-emotional skills give youth lifelong learning opportunities and better chances to succeed in the labor market (Garrido and Sey 2020). Indeed, evidence for LAC shows that labor market outcomes, both in terms of formal employment and wage premiums, are better among graduates from short-cycle programs than among dropouts of bachelor's programs. A set of reforms is needed to strengthen these higher education programs as profitable and attractive options for youth, such as curricular flexibility to market needs, modular structure, quality standards on service delivery, outcome-based accountability for providers, and certifications (Ferreyra et al. 2021).



Safe and Nurturing School Environments to Foster Global Citizenship, Social-Emotional Learning, and Student Well-Being

The pandemic and its associated policy measures have disrupted many aspects of youth life. As described in Chapter 2, in the wake of the pandemic, youth experience frustration, post-traumatic stress, anxiety, and depression. **For youth across the LAC region, the hardships brought on by the pandemic add to an already heavy burden of economic and social hardship, ranging from academic challenges and violence perpetration and victimization to high-risk sexual behavior and substance abuse. This brings the urgency of youth program reform to the fore.**

But what should effective youth program reforms look like? Over the past decades, most LAC countries have identified youth as a target for social development and welfare planning, having set up youth desks and departments in government, assigned public resources for youth, and funded programs specifically for youth. However, the focus of youth programs has often been on leisure and service to the community rather than on developing better understanding of the needs of and challenges faced by young people and how meeting those needs and addressing those challenges can lead to the overall economic and social development of societies. Another group of programs, which has been popular in LAC for decades, focuses on combatting negative instances of youth behavior, such as antisocial conduct, truancy, dropout, delinquency, and teenage pregnancy. Internationally, the effectiveness of these crisis-response approaches has been comprehensively studied (Agee 1979; Clarke and Cornish 1978; Cooper et al. 1983; De Leon and Ziegenfuss 1986).



As some of these programs have failed to show positive impact on negative youth behavior, current consensus in the youth **research community sustains that youth development is best supported by a combination of prevention science and fostering positive behavior.** Prevention approaches emphasize supporting youth before problematic behaviors occur. Instead of repairing problems of youth, positive youth development (PYD) promotes positive school, work, and life trajectories by focusing on the strengths and healthy development of youth (Bowers et al. 2010; Hull et al. 2018; Fagan et al. 2021). PYD approaches tend to cover one or several of five areas of youth functioning: social, emotional, cognitive, behavioral, and moral competencies. To foster youth well-being and educational and employment trajectories, these two approaches—prevention science and PYD—have converged in the youth literature.

The following two sections summarize evidence on PYD and prevention science approaches that work to improve the lives of youth, highlighting examples of global citizenship and social-emotional development programs implemented in LAC and beyond. In response to the looming mental health crisis in the wake of the COVID-19 pandemic, the final section expands the evidence-based policies with school-based mental health interventions.



Fostering Global Citizenship Competencies

Today's youth live in an increasingly interconnected and complex world. Like no generation before them, they are global citizens in the sense that they face a wide spectrum of forces—cultural, political, environmental, social, health, and economic—beyond their community or country that bear on their possibilities to progress and flourish or struggle. **Global citizenship education (GCEd) has emerged in response to these diverse forces that youth must deal with, seeking to foster globally competent youth that can critically examine global issues; understand their place in the world; respect differences and diversity; and take responsibility for a more sustainable world from the community to the global level** (UNESCO, 2015).). GCEd fits squarely within the PYD framework as it seeks to foster positive citizenship outcomes between youth and their families, school communities, and society at large.



Global citizenship competencies that youth need to thrive include behavioral competencies, such as the capability to interact respectfully in a diverse, multicultural world, as well as the ability to appreciate different perspectives about social concerns. Global citizenship competencies also include moral competencies, such as the commitment to sustainable development and collective well-being (ONU, 2015³⁰; OECD 2018; Mateo Díaz and Rucci 2019). In the face of global challenges, such as climate change and the COVID-19 pandemic, resilience is another global citizenship competency that youth need to adapt to risks, challenges, and stressful experiences in flexible and healthy ways (Rutter 1985; Hawkins et al. 1992; Masten, Best, and Garmezy 1990; Werner 1989, 1995). Among comprehensive GCEd models, GloEd in South Korea is one of few that have been rigorously evaluated. GloEd provides high school students with a five-week extracurricular program to foster global citizenship competencies through participative activities and dialogue. The program resulted in improved global citizenship competencies that persisted six months after the completion of the program, though results decreased somewhat after 12 months (Sim 2015).

Green Citizenship Education

Under the GCEd umbrella, one group of models focuses on the competencies required for green or environmental citizenship. Throughout the world, schools have positioned themselves as an effective change agent in fostering pro-environmental behaviors. School-based interventions to promote green citizenship often take advantage of bottom-up and participatory approaches to promote climate literacy and action. Meta-analysis findings of environmental education initiatives in diverse settings reveal that school-based interventions were more effective in improving prosocial behavior than extracurricular programs such as nature camps (average treatment effect was 0.65 versus 0.27). The average treatment effect for school-based educational models is twice that of extracurricular models. The study also reveals that effectiveness increased when the treatment is 10 hours or longer, and when classrooms use student-centered learning where participants are actively involved in their own learning through dialogues, video modeling, and feedback (Zelezny 2010). An example of an environmental education model from the LAC region is Rise Up, a free multimedia tool for primary and secondary schools developed by the Inter-American Development Bank that targets students, parents, and teachers to encourage them to use their creativity to come up with feasible, sustainable, long-term strategies to mitigate climate change. The initiative transforms teaching into learning experience through videos, games, and other resources to turn their schools into climate-friendly places, and with the aim to transfer these habits beyond school (Robles et al. 2015; Näslund-Hadley et al. 2015).

30. Global citizenship education is a target of Sustainable Development Goal 4.



Digital Citizenship Education

In the context of hybrid education systems, student connectedness through social media, and online access to information, schools face the need to support students in acquiring the skills for learning and participating in the digital environment. This includes closing the digital gap associated with digital literacy as well as the positive use of technology. Digital literacy relates to developing the basic skills to take advantage of digital technology, performing searches, retrieving and selecting information critically, and transforming it into knowledge. Safe use of online platforms requires basic skills to sign up for applications, navigate online, and follow data protection and privacy procedures, as well as to use social networks for educational purposes (Huang et al. 2020). In this context, digital citizenship refers to competencies to engage in an online community through positive and critical interactions, being responsible in the consumption and production of digital content, watching out for cyberbullying, and displaying respectful forms of social participation.

Topics covered in school-based initiatives typically consist of tools and practices to protect oneself online, information on illegal online and offline activity, and anti-cyberbullying practices (OECD 2019a). One of few rigorous evaluations of digital citizenship education assessed the training of high school teachers through the Digital Well-being—Schools project in Italy. The four sessions of three-hour training covered a range of digital literacy topics, including time and attention management, communication and collaboration, information research and evaluation, and digital content creation and publication. Although no effect was detected on digital competence in the treatment group compared with the control group, statistically significant effects were found in information skills (i.e., to evaluate, use, and communicate information) and literacy skills, which both improved by 2 percent. Moreover, effects were detected in digital media habits, including a reduction in problematic smartphone usage by 4.1 percent among female students, as well as reduced distress associated with media and internet overuse (Giu et al. 2018).



Development of Social-Emotional Competencies

Social-emotional learning, or SEL, has become an important curricular component in school systems throughout Europe and North America, usually focusing on social competence, bonding skills, and emotional competence, as well as clear and positive identity. Social competence is the skill set that helps youth be aware of their own feelings, thinking, and actions to accomplish social goals (Caplan et al. 1992). These skills include encoding and interpreting social cues and realistically predicting consequences and potential challenges to one's actions (Elias et al. 1994). Bonding is the ability of a child or adolescent to attach or commit emotionally to relationships with people such as family members, peers, and teachers (Bowlby 1982). Emotional competence is the ability to recognize and respond to emotions in yourself and others (Salovey and Mayer 1990). Clear and positive identity includes building self-esteem and a coherent sense of who you are as a person, often closely linked to the development of a cultural and ethnic identity (Plummer 1995). Although it makes intuitive sense for school systems to want to include these social-emotional skills in learning plans and curricula, there is a wide spectrum of SEL models to choose from. The literature offers insight into what school-based models and instruments work best to promote social-emotional competencies.



High-Dosage Universal Social-Emotional Learning

When school-based SEL gained traction in the 1990s, the social-emotional skill-building activities tended to be scheduled for short periods of time (often limited to a 30-minute activity for all students once per week) and be fragmented, single-purpose SEL interventions. Although such low-dosage single-purpose models had positive effects on social, emotional, behavioral, and academic outcomes, the effect size was modest. On the other hand, multipurpose SEL models that are integrated into daily school routines and lesson plans have stronger effects on the social-emotional skills development of students (Jones and Bouffard 2012). The policy message that emerges from the SEL literature points to high-intensity SEL models being more effective than low-intensity models. An example of such a high-dosage multipurpose intervention in the LAC region is the Positive Action curriculum in Belize. The curriculum integrates 140 mini-lessons into different subject areas through teacher training and coaching in the use of step-by-step manuals. The lessons are combined with school-climate-development interventions that address the entire ecosystem of each school, including the family, the community, and the school. Although Positive Action was implemented at both the primary and secondary levels, the experimental evaluation covered only the 6-to-13-year-old cohorts, showing positive effects in students' prosocial norms and engagement (Hull et al. 2021). Since high-dosage interventions such as the Positive Action curriculum are integrated into the general study program across subject areas, the additional cost is limited.

During the pandemic, some LAC education systems innovated by providing SEL through learning-from-home resources. In Honduras, the educational radio show *Sentipensantes al Aire* aired eight SEL radio soap opera episodes, combined with complementary activities for the 13-to-18-year-old age group. The radio instruction aimed to foster emotional regulation, empathy, and critical thinking. To further reinforce these skills, teachers received specific guidelines on how to provide complementary support through WhatsApp.



Targeted Interventions

To effectively develop social-emotional competencies of at-risk students, the multipurpose SEL models that are integrated into daily school routines should be combined with targeted interventions for individual students (Jones and Bouffard 2012). One of the most evidence-based models for such targeted PYD interventions is the Five Cs model of PYD, which fosters competence, confidence, connection, character, and compassion through individualized learning plans based on student risk factors (Geldhof et al. 2020). Youth who display the Five Cs are more likely to thrive. So how do you help a student develop the Five Cs? The implementation of the Five Cs model varies but usually integrates prosocial norms in the curricula and trains educators in management techniques to discourage disruptive behaviors in learning, as well as in one-to-one mentoring of students. The Five Cs model also tends to encompass referral action plans for youth at high risk. Community-based extracurricular activities are typically used to reinforce the development of the Five Cs (Fagan et al. 2021). The initial step of a targeted Five Cs intervention is to assess the risks and protective factors attached to the youth to identify needs and opportunities for SEL. Based on the assessment, the youth is coached in the development of a Five Cs action plan or project for a productive and healthy life, which should include concrete steps to contribute to their families, communities, and the world. The school cannot give youth the Five Cs, but educators can help youth themselves develop the “C” competencies. For example, the promotion of the “C” of compassion in the Five Cs model can involve individual or group compassion-focused therapy, cultivating compassion training, mindful self-compassion, cognitively based compassion training, and cultivating emotional balance (Kirby et al. 2017). Whatever the specific “C” that is promoted, a key element to the successful implementation of the Five Cs model is always close monitoring and reflection on one’s progress together with a school coordinator, teacher, or coach.



School-Based Student Mentoring

PYD models that effectively foster social-emotional competencies—whether the Five Cs or another model—typically have mentoring or coaching as a key component. Well-designed mentoring helps build the social-emotional skills, aspirations, and psychological well-being of youth. An example is the Thrive school-based mentoring model in the United States, where mentors provide academic and social-emotional guidance to vulnerable students. The Thrive school-based mentoring model has had positive effects on behavioral and social outcomes, reducing unexcused absences and discipline referrals, and improving connectedness (defined as positive feelings in students’ close relationships) (Gordon, Downey, and Bangert 2013). Other examples of evidence-based student mentoring models that promote SEL include the Rochester Resilience Project, which provides one-to-one sessions with “resilience mentors” (National Institute of Justice 2014), and Becoming a Man, which uses a cognitive behavioral therapy approach to help youth avoid automatic responses when involved in high-stakes situations. The approach has important effects, including a 12 to 18 percent boost in high school graduation rates and a 45 to 50 percent reduction in criminal arrests compared with the control group (Fine, Lansing, and Bacon 2018; Heller et al. 2017).



Life Goals

A cornerstone of many PYD models is the establishment of life goals. The concept of life goals originated in the 1970s and includes structured goal setting based on one's explicitly stated ambitions as well as outcomes one hopes to avoid. Youth are also guided to anticipate events and outcomes, conditioned by contextual and personal factors (e.g., values, worldviews, and perceptions of self) (Nair 2003). The range of outcomes associated with life goals includes changed perceptions and aspirations that can reduce the risk of teenage pregnancy. When youth internalize their individual life goals, the incentive to plan a teenage pregnancy appears to diminish (Näslund-Hadley and Binstock 2010; Azevedo et al. 2012). An example from the region is an SEL program for middle school female students in Tucuman, Argentina. The students established life goals and practiced critical thinking and perseverance, which yielded improvements in self-determination, self-regulation, and growth mindset scores. A longitudinal follow-up of administrative records found a 30 percent increase in the use of public health services, including reproductive health services (World Bank 2020). Many life goal models include internships to build the social-emotional competencies required in the workforce. Nevertheless, additional research is needed to determine the specific characteristics of internship models that effectively foster SEL. In Jamaica, an internship model that was part of a PYD program for unattached youth fostered communication, conflict management, and employability skills. Although the model yielded improvements in career self-efficacy and job-related skills, the effects on social-emotional development were modest and vanished after participation (Hull et al. 2020).



Sports, Arts, and Music

Many PYD models include creative components in sports, arts, and music. This group of PYD models appears promising for improving self-esteem, leadership and interpersonal skills, and student engagement in education (UNICEF 2019). Nevertheless, despite abundant studies, particularly of sport-based PYD interventions, outcomes are largely observational and correlational, and should be interpreted with caution. A meta-analysis of 31 studies of school-based interventions to boost physical activity found positive effects on mental health outcomes such as resilience, positive mental health, well-being, and anxiety.³¹ Effects were larger at the end of high school, but the size of effects showed large heterogeneity across studies, limiting the insights about designs and implementation that work (Andermo et al. 2020). A recent meta-analysis of qualitative evaluations of youth sports models also reveals high levels of heterogeneity. PYD sports models yielded statistically significant effects on life skills,³² with higher effects concentrated in team sport interventions. The study also detected significant effects on competence and confidence.³³ No statistically significant effects were identified on character, connection, health, and PYD climate (Bruner et al. 2021). Rigorous evidence of music interventions is also scarce and often limited to small samples. A review of studies of music interventions showed positive effects in acquisition of social-emotional skills such as emotional empathy, prosocial behavior, and self-esteem (Dumont et al. 2017). The limited evidence suggests that this type of intervention needs to be designed and implemented carefully to avoid any potential negative effects.



31. 0.748, 0.405, 0.877, and 0.347 Hedges' g , respectively (the ratio between the difference in means and the pooled and weighted standard deviation).

32. 0.570 standard median deviation.

33. Standard mean deviations of 0.209 and 0.219, respectively.

School-Based Response to a Pandemic-Induced Youth Mental Health Crisis

Even in the best of times, educators in LAC assume the role of social workers, attending not only to learning needs but also to socioeconomic and psychological needs of their students. During the pandemic, youth exposure to trauma has increased exponentially (Chapter 2), leaving schools struggling to respond to a looming mental health crisis at the same time as they are under great pressure to complete historic levels of unfinished learning due to school closures.

Effective school-based mental health strategies are often delivered through some type of multitiered system of supports (MTSS) model. Such a system is used extensively in the United States and Europe, structuring school-based mental health interventions along three levels of support. According to student needs, the model ranges from universal preventative measures in Tier 1 to individualized and intensive support in Tier 3. One advantage of a multitiered approach is that it allows for early identification and intervention before mental health challenges escalate. In every tier, the model involves the entire school community, including parents, educators, school administrators, and students (Gee et al. 2020; Näslund-Hadley, Koussa, and Hernández 2021). Given the importance of teachers' mental health, not least during the COVID-19 pandemic, we add below a fourth transversal theme to the MTSS model.



Universal Promotion and Prevention Related to Mental Health

Tier 1 of the MTSS model seeks to develop trauma-sensitive school environments that combine awareness raising and well-being practices with proper mental health screening to assess students' mental health.

School-based mental health screening. Schools provide an ideal setting in which to screen for at-risk students, often flagging students with previously hidden mental health needs (Eklund and Dowdy 2014). School-based screening practices of trauma-related psychological or physical symptoms are brief, usually consisting of a short survey filled out by teachers and sometimes also parents. The purpose is to alert that a student may be



at risk and in need of a more in-depth assessment. As trauma may take time to be detectable, the screening is not a one-time occurrence, but rather an ongoing process. Although standard questionnaires for students and screening guidelines for teachers may be suitable solutions, screening requires a system for referral and follow-up when high-risk problems are detected (Siceloff, Bradley, and Flory 2017; National Center on Safe Supportive Learning Environments 2021).

Mental health awareness raising. To raise the awareness about the relevance of mental health for student well-being, the entire school community—parents, teachers, and school staff—should be sensitized about mental health warning signs, consequences, and the resources and procedures available to them if needed. Such school-based mental health awareness campaigns in the United States have been found to improve students' knowledge of mental illness, as well as their attitudes toward mental health and help-seeking behaviors (Salerno 2017). In Europe, Saving and Empowering Young Lives, a school-based mental health awareness program that seeks to discourage suicidal thoughts among teenagers, produced a significant reduction of suicide attempts after one year of implementation (Wasserman 2015). In Australia, the KidsMatter model is a whole-school intervention to develop a positive school community, including social and emotional awareness raising for students, parents, and educators. Mental health outcomes improved in treatment schools after a year, with stronger effects after two years. For instance, student social and emotional competencies reported by parents and teachers increased by 7 percent compared with the control group. Positive effects were also found on academic outcomes (14 percent) and parental capacity to assist students with social and emotional issues (7 percent) (Slee et al. 2009).

Promotion of well-being and positive behavior for all. A systemic review of 12 universal mental health interventions targeting students aged 6 to 18 in low- and middle-income countries found that anxiety and depression symptoms were reduced (Bradshaw et al. 2021). The precise policies varied across studies. Most of the programs were carried out during school



hours and delivered (in equal parts) by teachers and counselors to groups of students or an entire class. The programs followed different psychological models such as cognitive behavior therapy, positive psychology, or health promotion and had an average duration of 17 weeks. Parents received information but were not directly involved in program activities.

For schools that lack the capacity to implement a comprehensive approach to foster a trauma-sensitive school environment lighter-touch interventions can have positive effects on student mental well-being. Probably the most used such lighter-touch intervention is mindfulness meditation, including yoga, muscle relaxation techniques, and breathing exercises. Evidence from a daily mindfulness meditation practice in the United Kingdom reduced self-reported stress (Cavanagh et al. 2013). Mindfulness interventions for students may also help teachers. An example is the MindUP program in southwestern Ontario, which provides mindfulness-based social-emotional learning to enhance student self-regulation and reduce behavioral symptoms. Among the effects was a reduction in teachers' self-reported emotional exhaustion (mean score change: -0.41) (Kim et al. 2021).

Ending school-based violence and bullying. As laid out in Chapter 2, la violencia y el acoso tienen un impacto negativo en los resultados de los jóvenes dentro y fuera de la escuela (OCDE, 2019b; Bacher-Hicks et al. 2021). Históricamente, las políticas educativas contra la violencia y el acoso en las escuelas han sido, en gran parte, de naturaleza punitiva. Actualmente, como respuesta a la falta de impacto de las intervenciones que simplemente castigaban a los perpetradores, muchos sistemas escolares a nivel internacional han adoptado modelos que pretenden abordar las complejidades de la violencia escolar y los comportamientos de intimidación. Este grupo de modelos suele incluir elementos tanto del PYD como de la ciencia de la prevención. Las estrategias basadas en la evidencia para combatir el acoso escolar incorporan tres grandes grupos de intervenciones.

First, effective anti-violence-and-bullying programs engage the whole school community—including students, school staff, and parents—in building a positive school climate. Typically, the first step of such models is the organization of a school community core team in charge of taking stock of the situation and designing proposed action plans. Evidence-based PYD models to combat bullying and violence by fostering a positive school climate include the Learning Together program in the United Kingdom and the PRIMA program in the Netherlands. Both programs created action groups of staff, students, and parents tasked with mapping the school disciplinary rules and restorative practices, as well as the prevalence



also included bullying experts to guide the development of school protocols. PYD models that foster a positive school climate generally include training for teachers and other school community members in the development of moral and behavioral competencies to foster effective behavior choices and action patterns, including nonverbal and verbal strategies. Both the PRIMA and Learning Together models include professional development to foster respectful teacher–student relations; repair relationships; help teachers develop a good disciplinary climate and place limits on unacceptable behavior in the class; and raise awareness, skills, and responsiveness with regard to bullying. Both programs decreased self-reported bullying victimization and perpetration. Learning Together had an adjusted effect size of -0.08 in the mean Gatehouse Bullying Scale bullying score and also led to improvements in other health outcomes linked to psychological well-being and risk behaviors (Bonell et al. 2019; van Verseveld 2021). The whole-school approach often also includes the provision of opportunities for students to be exposed to prosocial norms and engage in prosocial activities, for example, through volunteer activities in the local community. These types of evidence-based anti-bullying models have yet to gain traction in LAC, where a review for this publication identified only seven countries that have launched programs to foster a positive school climate, and just two that have put strategies in place to fight cyberbullying. An example is Uruguay where school councils bring together elected school community members—educators, school administrators, parents—several times yearly to foster a positive school climate and address violence and bullying.

Second, the prevention science literature calls for tailored interventions that work with bullying perpetrators and victims to develop intervention plans for both groups of students, continuous dialogue with caregivers, and supervision of students to promptly intervene when school-based violence and bullying occur (Olweus and Limber 2010). Although few evaluations assess tailored interventions in isolation, a meta-analysis of school-based bullying-reduction programs—including adult supervision inside and outside the classroom—found that the effectiveness increased with the intensity and frequency of the intervention. The comprehensive Olweus Bullying Prevention Program in Norway and the United States combines hot-spot supervision at locations where bullying is likely to happen, with specific strategies targeting students identified as bullies or victims and their parents, such as the supervision of students’ activities, serious talks with those involved in these behaviors, and individual intervention plans. An evaluation in Norway followed two cohorts of eighth-to-ninth-grade students in 14 schools for two years, measuring results after 20 months of intervention. Being bullied was reduced by 27.5 percent and bullying other students was reduced by 31 percent (Olweus and Limber 2010).



Third, schools that have mechanisms to report school-based violence and bullying often manage to reduce both bullying perpetration and victimization rates (Gaffney, Farrington, and Ttofi 2019). The SiSeVe online platform in Peruvian schools allowed students in lower secondary education, their parents, friends, or other witnesses to anonymously report bullying incidents. The platform was launched in conjunction with an awareness-raising campaign that included workshops with hands-on activities in the use of the platform for the entire school community. The campaign also included the distribution of materials to raise awareness of the consequences of violence and bullying and the relevance of reporting incidents. Any case reported on the portal was automatically sent to local authorities for immediate action. Evaluation findings show an increase in the reporting of violence and bullying incidents and a reduction in the bystander behavior index. The intervention also resulted in improvements in the likelihood of dropouts as well as learning across several subject areas (Gutierrez et al. 2018).

Protective Support for Students at Risk

Based on screening conducted in Tier 1, at-risk students are targeted in Tier 2 for early support. This includes preventative measures focused on students at risk to address anxiety, depression, emotional hardship associated with bullying, violence, abuse, substance consumption, and behavioral disorders. PYD approaches should be deployed as soon as the need is identified, including school-based services to enhance healthier behaviors through counseling and close monitoring (Anderson and Borgmeier 2010). The FRIENDS for Life program, a cognitive behavioral therapy program developed in Australia, was implemented in several countries with positive effects on students' social skills. In the evaluation of a 10-week intervention implemented in Scotland, the program yielded positive effects such as reductions in anxiety, low mood, and self-esteem (Liddle and Macmillan 2010).

School-based mental health counseling. Socioeconomic and time constraints make it challenging for many caregivers to ensure that their adolescents get the mental health services they need. A solution is school-based mental health counseling, where adolescents can get support in their everyday environment. Since funding such school-based mental health services would be a constraint for most school systems, it is often necessary to establish partnerships with community health organizations. School-based counseling



35. 0,107 y 0,07 desviaciones estándar, respectivamente.

of at-risk students in anger management, self-regulation, and prosocial behavior has been found to help them cope with emotional hardship and develop positive attitudes (Anderson and Borgmeier 2010; Cook et al. 2008). One-to-one counseling has been found to be more effective than group therapy when there is a risk of mental health stigma (Voices for Georgia's Children 2020). A meta-analysis based on 37 studies of school-based counseling and mental health services in the United States and the United Kingdom showed that the programs yielded a reduction in the removal of students from the regular classroom for a defined period for disciplinary sanctions imposed by school authorities³⁷ (Valdebenito et al. 2018).

Safe spaces in schools. The establishment of safe spaces in schools or community places mitigates risks for students at risk of violence and bullying. During the Ebola crisis, young women were exposed to sexual violence as they spent more time with male family members during school closures. A targeted intervention in Sierra Leone provided safe spaces through Empowerment and Livelihoods for Adolescents clubs, where young women can attend and socialize, find support, receive health and reproductive information, and attend life skills courses and vocational training. This intervention resulted in lower out-of-wedlock pregnancies and increased reenrollment postcrisis compared with a control group (Bandiera et al. 2020).

Close monitoring. When implementing protective support services for at-risk students, it is important to establish goals together with each student at the onset of the intervention, including measurable outcomes. Throughout the intervention, systematic reports are critical to track progress or regression (e.g., through daily teacher check-in, a home-and-school note system, weekly examination by the intervention coordinator, and regular team reviews). If no progress has been made at the conclusion of the recommended intervention period, or if mental health trauma has escalated, data-driven procedures should advise on the need to move to the next phase of intervention. Additionally, monitoring needs to encompass the fidelity of implementation as departures from the original design have shown detrimental effects on outcomes (Anderson and Borgmeier 2010).

Individualized Interventions for Students with Mild to Severe Warning Signs

The third tier supports students in need of more intensive support services. The provision of individualized intensive support is frequently beyond school capabilities, and mental health interventions provided by school staff have shown only modest effects on depression and anxiety (Corrieri et al. 2014; Werner-Seidler et al. 2017). Instead, schools are encouraged to form alliances with the community and help refer students to psychologists and mental health and social welfare professionals. Whenever a young person displays complex signs of mental health distress, schools must have the capabilities to refer the student to a range of professionalized services, from home treatment to community-based and outpatient care to emergency and in-patient care (States, Detrich, and Keyworth 2017). Schools represent one of the most reliable connectors for students to those professional services, and when these interventions take place in a school setting, some of the common barriers to traditional mental health services such as stigma, cost, time, and location may be reduced. In Australia, Headspace is an innovation in youth mental health services through a network

36. La puntuación de la ansiedad basada en las Escalas de Ansiedad Infantil de Spence (SCAS) disminuyó en casi 4 puntos y la puntuación de mal humor basada en el Inventario de Depresión Infantil (CDI) en 4,74 puntos, mientras que la puntuación de autoestima basada en el Cuestionario de Autoestima Libre de Cultura (CFSE) aumentó por 11 puntos.

37. 0,30 desviaciones media estándar.

of primary care providers across the country. The Headspace centers are supported by the government and offer a varied set of services. Youth are referred to Headspace centers through schools or connected through awareness activities. The program is effective over a wide range of outcomes, including large effects on suicidal ideation and small effects in reducing psychological distress and improving social connectedness (Hilferty et al. 2015).



Support for the Mental Well-Being of Teachers

Although not formally a tier of the MTSS, we add the transversal issue of teachers' mental well-being to our model (Figure IV.2). Being a teacher is often a lonely and stressful profession. Disruptive student behaviors often affect the learning dynamics in the classroom, creating a stressful environment for both students and the teacher. Compared with other professions, teachers more frequently report poorer working conditions, higher workloads, and few developmental opportunities (Harmsen et al. 2018). The inherent stress of being a teacher was exacerbated in recent years by anxieties about COVID-19 and related lockdowns. Despite compelling evidence on the importance of supporting teachers' well-being, applied knowledge on what works is scarce. Available research suggests that teacher training in relationship-building and management of classrooms with adversity-impacted students could positively affect stress levels and trauma-informed attitudes of teachers (Shelley, Crosby, and Vanderhaar 2019). The lack of research on teacher mental health interventions likely stems from limited investments in this area. A mapping conducted in relation to this publication identified only eight LAC countries that have implemented some type of intervention to promote school members' mental health during the pandemic. The reported support to promote teachers' mental health includes activities such as the planning of regular check-ins with school directors and surveys of teachers' mental health. Education systems should also implement preventive mental health support for teachers such as structured opportunities to discuss challenges with fellow educators and, when needed, counseling.

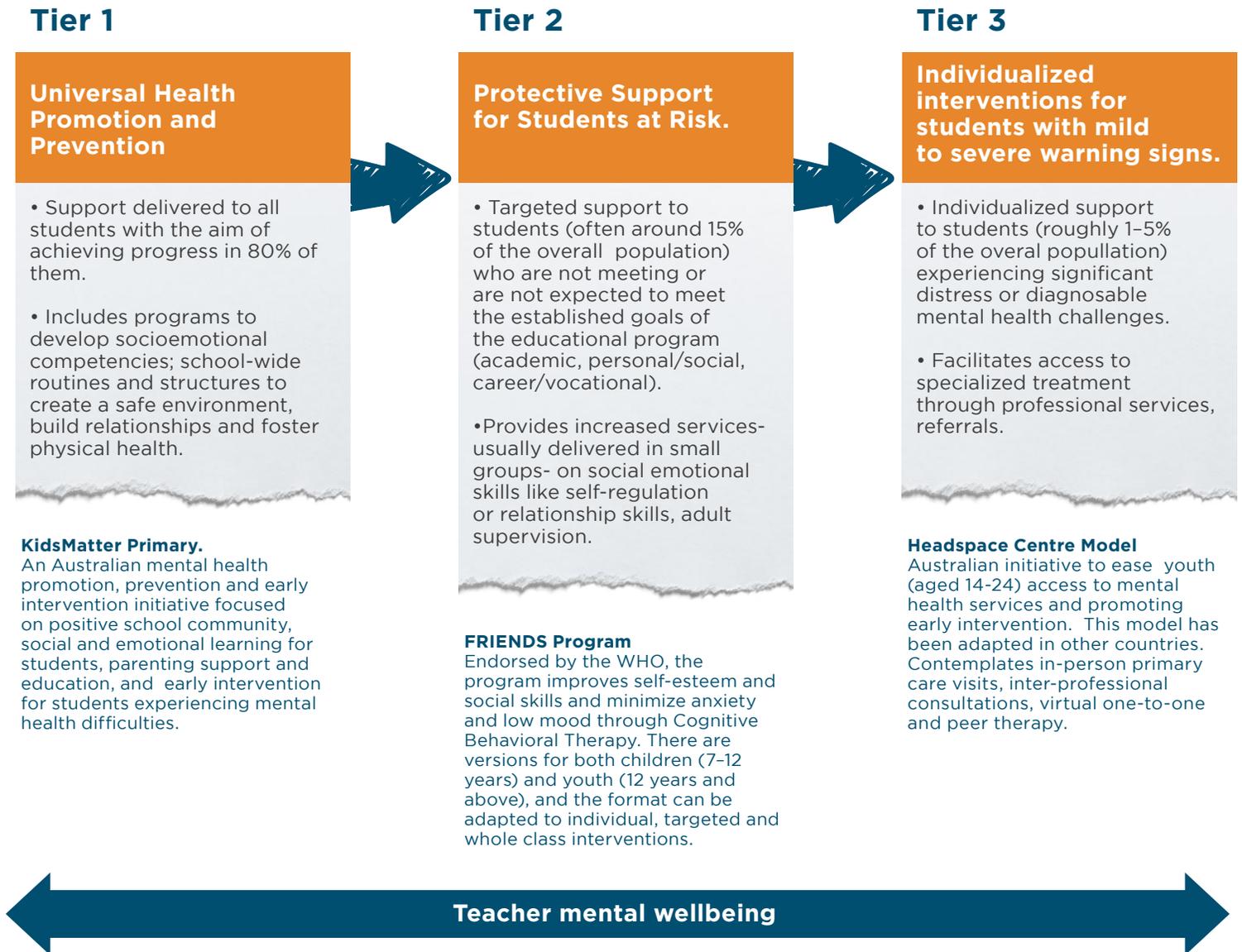


Closely related to teachers' mental well-being is the development of their social-emotional competencies, but in this area available research is limited as well. A recent meta-analysis shows that the efficacy of training teachers in SEL has small to medium effect sizes on increased well-being and social and emotional competencies and reduced psychological distress. More research is needed to define the precise components required to support the SEL of teachers (Oliveira et al. 2021).



Figure 4.2

Multitiered system of supports (MTSS) for school-based mental health

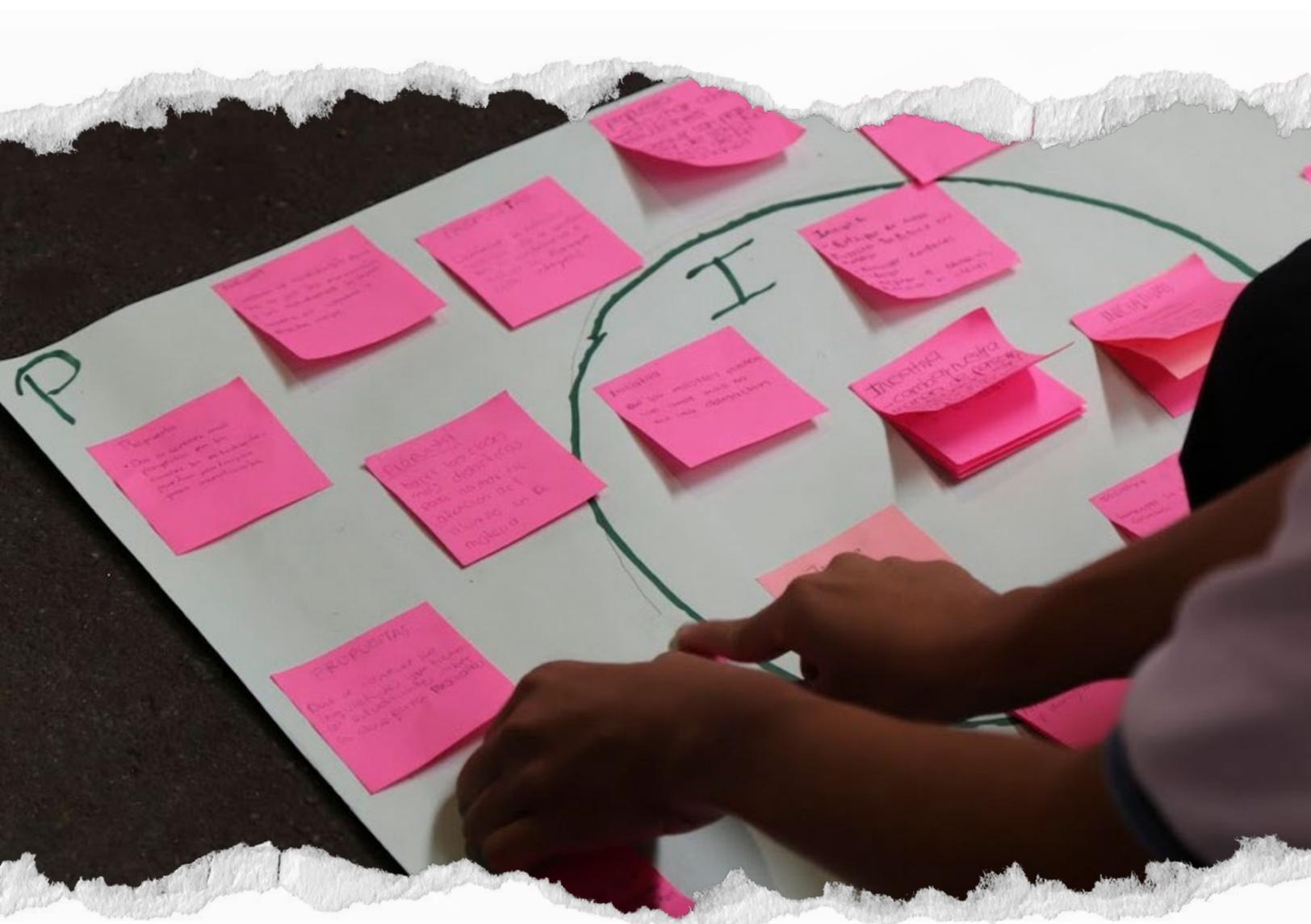


Source: Authors based on MTSS framework originally developed by States, Detrich, and Keyworth (2017); Graetz et al. (2008); Liddle and Macmillan (2010); and Orygen Youth Health - <https://oyh.org.au/>.

Final Comments

In the trying times of the COVID-19 pandemic, educators, school leaders, and policymakers across LAC are committed to getting youth back to the classroom and back to learning. However, education systems should not merely recover from the pandemic but seize the opportunity to build back better by tackling long-standing historical inequalities in education.

There may be no silver bullet for responding to the devastating effects of prolonged pandemic-related school closures, but the literature offers insights into evidence-based policies and models governments and school systems can use to address the myriad of immediate and medium-term challenges faced by LAC education systems. The chapter presents four core groups of recommendations on such evidence-based models and policies that are scalable and able to be put into the context of country-specific needs.



First, school systems need to reengage the masses of LAC youth who have lost contact with their schools during the pandemic, ensuring that they complete their education and career pathways. . In this chapter, we present evidence-based tools, models, and strategies that can be contextualized and blended to reengage missing or non-contactable students. But the region's resource-strapped schools cannot do this alone. Policymakers must ensure that education systems have resources and partners with which to implement comprehensive reengagement and dropout prevention strategies. Perhaps most importantly, given the myriad of factors that cause students to disconnect from school, education systems must partner with community organizations and government agencies in charge of health and social development. Only by partnering with these organizations can education systems address the underlying inequalities that lead to the disconnect from school, including sibling caretaking responsibilities, mental health challenges, the digital divide, and socioeconomic challenges (e.g., breadwinner responsibilities, food insecurity, and evictions). Foremost among evidence-based tools is the expansion of early warning detection systems to identify students at risk of dropping out. Such systems are cost-effective by allowing timely interventions through school-based tutoring, mentoring, and social-emotional support, combined with home interventions by partner organizations. Both digital tools and home visits—in collaboration with community organizations—should be employed in the active search for disconnected students. When socioeconomic barriers are causing a disconnect from school, financial support programs help boost student engagement and prevent dropout.

Second, the region should take advantage of the considerable investments made during the pandemic in the use of educational technology to seek to permanently close the digital divide and digitally transform education systems. An effective remote learning system goes beyond access to devices and the internet. Taking advantage of the potential of hybrid learning models in an inclusive manner requires

"School systems must re-engage the vast numbers of young people who have lost touch with their schools during the pandemic, ensuring they complete their education and career paths."



access to connectivity and complementary inputs. Effectiveness is linked to setting high-quality standards on content adaptation, structured interactions, and close monitoring of students' progress. The gains of technology-based learning increase with targeted content, individualized feedback, and teachers' training in time management in the classroom, which enable teachers to determine the amount of time allocated to digital platforms and bridge such activities to what is being taught in class. The use of a digitized education information and management system, or SIGED, opens up the opportunity to collect and use high-quality data that facilitate the implementation of outcome-oriented practices. Norms to manage education in a virtual environment become crucial. Moving education to a virtual environment does demand an immediate agenda on data security management and privacy, with specific norms for data collection and use in education. At this juncture, zeroing in on digital transformation will pay huge dividends in terms of education access, quality, and learning for generations to come.

"The region must take advantage of the enormous investments made during the pandemic in the use of educational technologies to close the digital divide once and for all and digitally transform educational systems."



Third, throughout the region, education systems should seize the moment to reinvent learning. Most LAC education systems were conceived more than a century ago before the neuroscientific advances of recent decades about how people develop skills. Even if the education discourse has advanced, the predominant education model remains one that perceives schooling as a transfer of knowledge. Consequently, classrooms tend to be organized in straight rows with a teacher lecturing and writing on the blackboard and students copying information and memorizing content. In this chapter, we argue that LAC education systems should seize on the disruption created by the pandemic to reinvent education and change how students learn and what they learn.

"The region must take advantage of the enormous investments made during the pandemic in the use of educational technologies to close the digital divide once and for all and digitally transform educational systems."

In the short term, interventions for learning recovery should focus on reinforcing core content and adopting the instructional approaches of teaching at the right level and accelerated learning. A high dose of mentoring is effective in accelerating learning, and technology can be used to leverage and extend support at a reduced cost.

In the transformation agenda, the region's education systems need to quickly adapt to the changing human capital requirements of the labor market and expand students' alternatives to acquire practical skills during high school and/or after graduation for those who do not go to college. In terms of content, curriculum redesign should be a priority not only to reduce the gap between intended and attained curricula but also to include global citizenship competencies youth need to thrive in an increasingly interconnected and complex world. Those include behavioral competencies, moral competencies, and the resilience to adapt to risks, challenges, and stressful experiences in flexible and healthy ways. Similarly, digital citizenship education helps foster the competence to engage in an online community through positive and critical interaction, being responsible in the consumption and production of digital content, watching out for cyberbullying, and displaying respectful forms of social participation. School-based green citizenship education improves prosocial behavior, particularly when classrooms use student-centered learning where participants are actively involved in their own learning.



Education systems should also implement school-based SEL models that are integrated into the academic curricula and regular classroom interactions, thereby ensuring a high dosage of social-emotional development activities. SEL models that are integrated into daily school routines should be combined with targeted interventions for individual students, such as the Five Cs model of PYD, which fosters competence, confidence, connection, character, and compassion through individualized learning plans based on student risk factors. Many PYD models include creative components in sports, arts, and music, which appear promising for improving self-esteem, leadership and interpersonal skills, and student engagement in education.

In terms of pedagogical practices, education systems need to transition from memorization to “learning-to-learn.” This will entail prioritizing professional development for teachers, as they are the critical agents of change to replace procedural understanding with conceptual understanding.



Fourth, in response to unprecedented levels of youth isolation, trauma, and depression, education systems must prioritize safe and nurturing learning environments. Throughout the region, schools are struggling to respond to a looming mental health crisis at the same time as they are under great pressure to complete historic levels of unfinished learning due to school closures. The most evidence-based model for school-based mental health services is the multitiered system of supports (MTSS), which allows for early identification and intervention before mental health challenges escalate. In this chapter, we outline an MTSS model that is structured along three levels of support according to student needs, ranging from universal preventative measures in Tier 1 to individualized and intensive support in Tier 3. As anxieties about COVID-19 and related lockdowns have exacerbated the stress teachers experience, we expand the MTSS model to include support for teachers' mental well-being. Such support should include preventive mental health services for teachers, including, for example, regular check-ins, structured opportunities to discuss challenges with fellow educators, and, when needed, counseling.

"The region must take advantage of the enormous investments made during the pandemic in the use of educational technologies to close the digital divide once and for all and digitally transform educational systems."

To ensure safe and nurturing school and classroom environments, education systems must reduce the prevalence of school-based violence and bullying. EThis must include efforts to tackle cyberbullying, which has reportedly increased during the pandemic. As long as schools are plagued by violence, youth's rights to education and health cannot be ensured. School-based violence and bullying—whether physical, sexual, or psychological—are most effectively addressed through policies that recognize the complexities of such behaviors. In this chapter, we propose three levels of evidence-based policies that draw on elements of the literature on PYD—fostering positive youth behaviors and attitudes—as well as the prevention



science literature. First, implement strategies and tools to foster a positive school climate, engaging the entire school community from students to school administrators to parents to community organizations and authorities. Second, provide targeted interventions to victims and perpetrators. Third, implement mechanisms to supervise and report school-based violence and bullying.

The challenge is unprecedented. But by drawing on the talent, expertise, and commitment of educators and policymakers from across the region, LAC can go beyond merely a return to the pre-pandemic status of education. In doing so, education systems should contextualize and blend available evidence-based tools, models, and strategies that reengage missing and non-contactable students, reinvent learning, foster digital transformation, and ensure safe and nurturing school environments.



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Annexs



Annex chapter 2

Annex

Annex 1. Sources of information available in each country participating in the survey

Country	Survey	Year/Quarter
Argentina	Permanent Household Survey (PHS)	2019T1, 2019T2, 2019T3, 2019T4 2020T1, 2020T2, 2020T3, 2020T4
Bolivia	Household Survey	2019 2020
Brazil	National Continuous Domicile Sample Survey (PNADc)	PNADc: 2019T1, 2019T2, 2019T3, 2019T4 2020T1, 2020T2, 2020T3, 2020T4, 2021T1 PNADc COVID-19: July to November 2020
Chile	National Socioeconomic Characterization Survey (CASEN)	2017 2020
Colombia	Large Integrated Household Survey (IHS) Social Pulse Survey	IHS: February 2019, May 2019, August 2019, December 2019 February 2020, May 2020, August 2020, December 2020 PHS: July to November 2020, March 2021, July 2021
Costa Rica	National Household Survey on Living Conditions and Poverty (ENAHO)	2019 2020
Ecuador	National Survey on Employment, Unemployment, and Underemployment (ENEMDU)	2029T3, 2019T4 2020T3, 2020T4
Mexico	National Survey of Occupation and Employment (ENOE) and Telephone Occupation and Employment Survey (ETOE)	ENOE: Quarterly data from 2015 to 2021 ETOE: June 2020
Paraguay	Permanent Continuous Household Survey (PCHS)	2019 2020
Peru	National Household Survey on Living Conditions and Poverty (ENAHO)	2019 2020
Uruguay	Continuous Household Survey (CHS)	2019 2020

Source: Author's own elaboration.

Annex chapter 3

Annex A. Contextual statistics

Table A.1

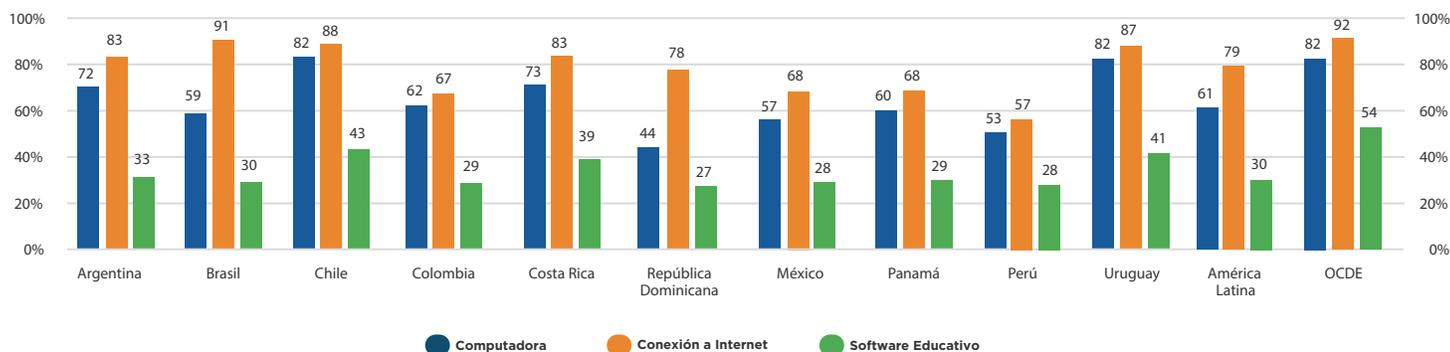
Internet penetration in Latin America

Country	Last Year Available	Internet Penetration
Uruguay	2019	83%
Chile	2017	82%
Costa Rica	2020	81%
Trinidad and Tobago	2017	77%
Dominican Republic	2019	76%
Paraguay	2020	75%
Argentina	2017	74%
Brazil	2019	74%
Mexico	2020	72%
Peru	2020	65%
Colombia	2019	65%
Panama	2019	64%
Bolivia	2020	55%
Ecuador	2016	54%
El Salvador	2019	50%
Guatemala	2019	44%
Honduras	2017	32%
Nicaragua	2017	28%

Fuente: World Bank, World Development Indicators (2021)

Graph A.1

Students age 15 in Latin America who have access to digital equipment at home, 2018



Source: CEPAL y UNESCO (2020).

Table A.2

Countries with national educational solutions in Latin America, 2020

Country	Name of the platform	Type of Solution	Brief description
Argentina	<i>Seguimos educando</i> (We continue to educate)	Educational portal and TV	TV and video lessons by subject area for primary- and secondary-level education and materials for teachers to prepare online classes
	<i>Biblioteca Digital</i> (Digital Library)	Educational portal	Portal for students and teachers in all schools in the country to access more than 100 classic books and novels
Brazil	<i>Banco Internacional de Objetos Educacionais</i> (International Bank of Educational Objects)	Educational portal	Open educational content from preschool to university education
Chile	<i>Aprendo en línea</i> (I learn online)	Educational portal	Provides pedagogical resources for students from the first grade of primary school through the fourth year of high school
Colombia	<i>Colombiaaprende</i> (Colombia learns)	Educational portal	Online tool created by the Ministry of Education to support teachers, families, and students in the e-learning process in the current context of the COVID-19 pandemic
	<i>3, 2, 1 Edu-Acción</i> (3, 2, 1 Edu-Action)	TV/Radio	Educational TV programs
Costa Rica	<i>Aprendo en casa</i> (I learn at home)	Educational portal	Digital resources in education from early childhood to secondary school
	<i>Caja de herramientas</i> (Toolbox)	Educational portal	Digital tool for teachers to conduct distance education classes created by the Ministry of Education
Ecuador	<i>Recursos educativos digitales</i> (Digital educational resources)	Educational portal	Ministry of Education tool for students and teachers to support learning at home
El Salvador	<i>Material para la continuidad educativa</i> (Material for educational continuity)	Educational portal	Teaching resources for all students in the context of the current COVID-19 crisis
Guatemala	<i>Aprendo en Casa</i>	Educational portal	Guide and documents with suggestions for home learning
	DIGECADE	Educational portal	Online resources for teachers
Honduras	Educatrachos	Educational portal	Content, activities, tools, and educational resources in various formats, designed to be used by teachers and students
Mexico	<i>Aprende 2.0</i> (Learn 2.0)	Educational portal	Ministry of Education resources to promote the use of ICT
	<i>Aprende en casa por TV y en línea</i> (Learn at home on TV and online)	Educational portal and TV	Classes via TV and online for all levels based on the national curriculum
	<i>Libros de texto</i> (Textbooks)	Educational portal	Access to digital books
	<i>Telesecundaria</i>	Educational portal	Existing program for distance learning in rural areas
Panama	<i>Educapanama</i>	Educational portal	Online courses provided by the Ministry of Education for preschool, primary and high school students to follow classes remotely
	<i>Tu escuela en casa</i> (Your home school)	Educational portal	Provides content, activities, tools, and educational resources proposed by the Ministry of Education designed for use by teachers and students
	<i>Biblioteca Digital</i>	Educational portal	Resources to support schools and teachers with educational materials and the ability to design lessons on the platform
Peru	<i>Peru Educa</i>	Educational portal	A digital platform provided by the Ministry of Education that offers services to the educational community
Uruguay	<i>Plan Ceibal</i> (Ceibal Project)	Learning platforms	Resources for teachers and students that can be accessed from any device, as well as remote programs that help mitigate the effects of the suspension of educational activities due to the temporary closure of educational institutions
Venezuela	<i>Cada familia una escuela</i> (Every family, a school)	TV/Radio	TV program with educational content

Source: Artopoulos (2020).

Annex B. Methodological note

It is assumed that learning loss due to the closure of face-to-face activities is reflected in a reduction of the learning-adjusted years of schooling (LAYS), which are calculated according to the methodology of Filmer and colleagues (2020), such that:

$$LAYS_i = esc_i * R_i$$

Where R_i is the country's learning measure i relative to the learning of a numerator country n , defined by:

$$R_i = \frac{L_i}{L_n}$$

Where L_i and L_n are the measures of schooling productivity for both countries. The Human Capital Index of the World Bank (2021) uses the average TIMSS (Trends in International Mathematics and Science Study) assessment math score as a measure of L . However, any other assessment can be used, including PISA (Filmer et al. 2020). The numerator is usually defined as the country with the highest score—in this case, Singapore.

Based on this, it is assumed that the learning gains from educational productivity (G_i), measured in points per year, are 40 PISA points, as estimated by Azevedo and colleagues (2020) for upper-middle-income countries. Based on this premise, the loss of points (PL_i), is calculated as follows:

$$PL_i = G_i * C_i * (1 - M_i)$$

Where C_i is the time during which the school is closed, as a percentage of the school year, and M_i is the effectiveness of the mitigation measures (from 0 percent to 100 percent).

Based on the information given for school closures, loss scenarios are defined for four mitigation scenarios (0 percent, 25 percent, 50 percent and 75 percent).

Given this learning loss, a new learning measure can be defined for the scenario e (R_i^e), where:

$$R_i^e = \frac{L_i - PL_i}{L_n}$$



In this way, $LAYS_i$ can be calculated after the shock of school closures¹:

$$LAYS_i^e = esc_i * R_i^e$$

And therefore, defining educational loss a (SL_i):

$$SL_i = LAYS_i - LAYS_i^e$$

To estimate the loss in educational returns, the rate of return to education under normal (pre-pandemic) conditions (r_i ,) is calculated using a classic Mincer regression with data from household surveys in each country. This measure is interpreted as the percentage increase in income for each additional year of schooling. Based on this, linear returns are assumed with respect to learning-adjusted schooling. Thus, considering the new LAYS after the shock of school closures, the new educational rate of return is defined as:

$$r_i^e = \frac{LAYS_i^e * r_i}{LAYS_i}$$

Thus, the return loss (RL_i) is defined by:

$$RL_i = r_i - r_i^e$$

This measure is interpreted as the percentage increase in income per additional year of schooling that decreases due to learning loss. That is, if, prior to the pandemic, each additional year of schooling generated an increase of r_i percent of wage income, then due to learning loss, now it will only generate an increase of r_i^e percent. The difference—the additional percentage that has been lost—is the measure RL_i .

Calculation of wage losses

Given the learning loss and the new educational return, the wage loss is calculated using an actuarial projection of the working-life earnings of the cohorts ages 6 to 18 in 2020 from national data on mortality, educational returns, and earnings by age.

For each country, we start from a 13×57 P matrix, with one row for each cohort studied and one column for each projected year, such that the first column is the population projection by cohort in 2020, and the subsequent columns correspond to:

$$p_{jt} = p_{jt-1} - p_{jt-1} * q_a$$

1. Azevedo et al. (2020) They also define a measure of schooling estimated after the income shock (esc_i^{**}), making calculations of school dropout due to the pandemic. In this case, this is not done in order to isolate the effect of learning loss from that of dropping out of school.

p_{jt} corresponds to the projected population of the cohort j in the year t , which is equal to the population of that cohort in the year $t-1$ minus the absolute mortality for that age group, which corresponds to the population multiplied by the mortality rate for the age a .

With this information, and based on the average wages by age, the base wage matrix W_i^0 with the dimensions 13x57 is constructed, consisting of the wage income in present value for each cohort for all the estimated years, assuming a working life of 45 years, with entry into the labor market at age 18 and retirement at age 63. In this matrix each element is defined by:

$$w_{jt} = \frac{W_{jt} * p_{jt}}{(1 + d)^t}$$

Where w_{jt} is each element of the matrix W_i^0 for the cohort j and the period t , w_{jt} is the average individual income of each cohort in the period, p_{jt} is the estimated population of the cohort in the period, and d is the discount rate, which has been defined as 3 percent. The wage income of the working life of the population studied is the sum of all the elements of this matrix.

Given the educational return loss (RL), defined in the previous subsection, this is transformed into percentage of revenue loss (PI_i^e) according to a sensitivity scenario based on data from Jaume and Willén (2019). Thus, the income matrix is defined by:

$$W_i^e = PI_i^e * W_i^0$$

Where the wage income of the working life of all the cohorts studied in this scenario is the sum of all its elements.



Annex C. Model results

Table A.3

Pre-pandemic educational return and return loss by scenario (in percentage points)

Country	Educational Return (Pre-pandemic)	Loss of educational return			
		Scenario 1	Scenario 2a	Scenario 2b	Scenario 2c
Chile	11.47	1.05	0.79	0.52	0.26
Colombia	11.69	1.15	0.87	0.58	0.29
Costa Rica	10.93	1.05	0.79	0.53	0.26
Mexico	11.16	1.07	0.81	0.54	0.27
Argentina	6.94	0.0	0.53	0.35	0.18

Source: Own preparation based on the results of the model.

Table A.4

NPV of the total wage loss for all cohorts (billions of USD PPP)

Country	Scenario 1	Scenario 2a	Scenario 2b	Scenario 2c	Scenario 3
Chile	93.90	70.42	46.95	23.47	15.31
Colombia	188.64	141.48	94.32	47.16	30.64
Costa Rica	27.69	20.77	13.85	6.92	4.38
Mexico	485.46	364.09	242.73	121.36	82.29
Argentina	217.72	163.29	108.86	54.43	26.90
Loss NPV	1013.41	760.06	506.70	253.35	159.53
% loss (with respect to baseline)	10.77%	7.86%	5.11%	2.49%	1.55%

Source: Own preparation based on the results of the model.

Table A.6

Wage loss as percentage of baseline

Country	Scenario 1	Scenario 2a	Scenario 2b	Scenario 2c	Scenario 3
Chile	9,13%	6,85%	4,57%	2,28%	1,49%
Colombia	9,86%	7,40%	4,93%	2,46%	1,60%
Costa Rica	9,64%	7,23%	4,82%	2,41%	1,52%
Mexico	9,61%	7,21%	4,80%	2,40%	1,63%
Argentina	10,12%	7,59%	5,06%	2,53%	1,25%

Source: Own preparation based on the results of the model.

Table A.7

NPV of wage loss of working life per capita (USD PPP)

Country	Scenario 1	Scenario 2a	Scenario 2b	Scenario 2c
Chile	28.584	21.438	14.292	7.146
Colombia	18.112	13.584	9.056	4.528
Costa Rica	28.512	21.384	14.256	7.128
Mexico	17.136	12.852	8.568	4.284
Argentina	23.193	17.395	11.597	5.798

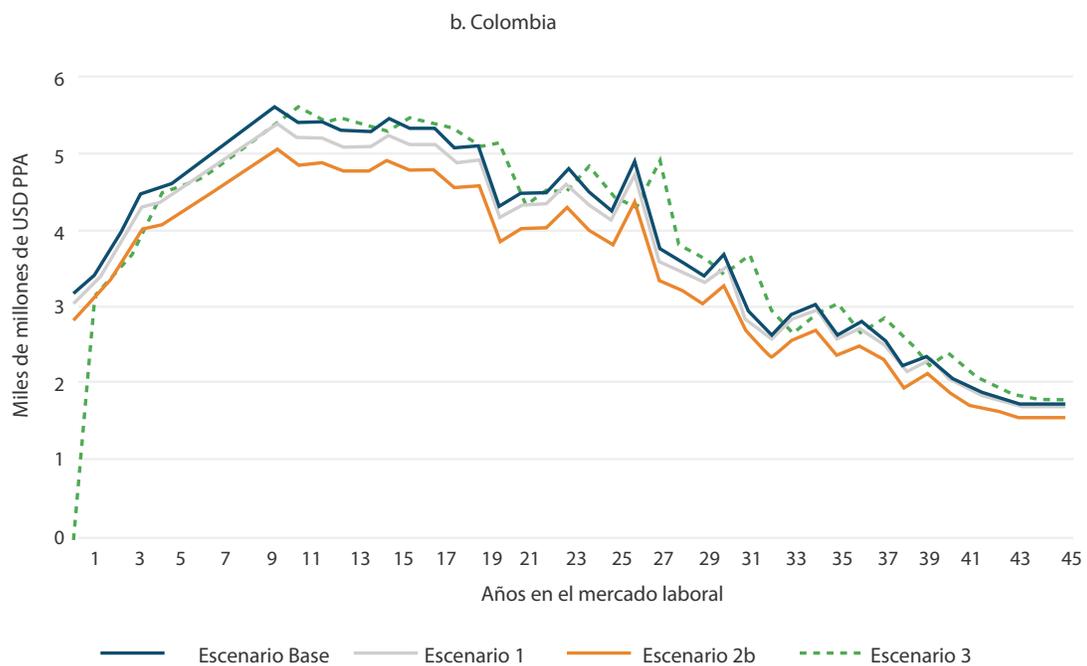
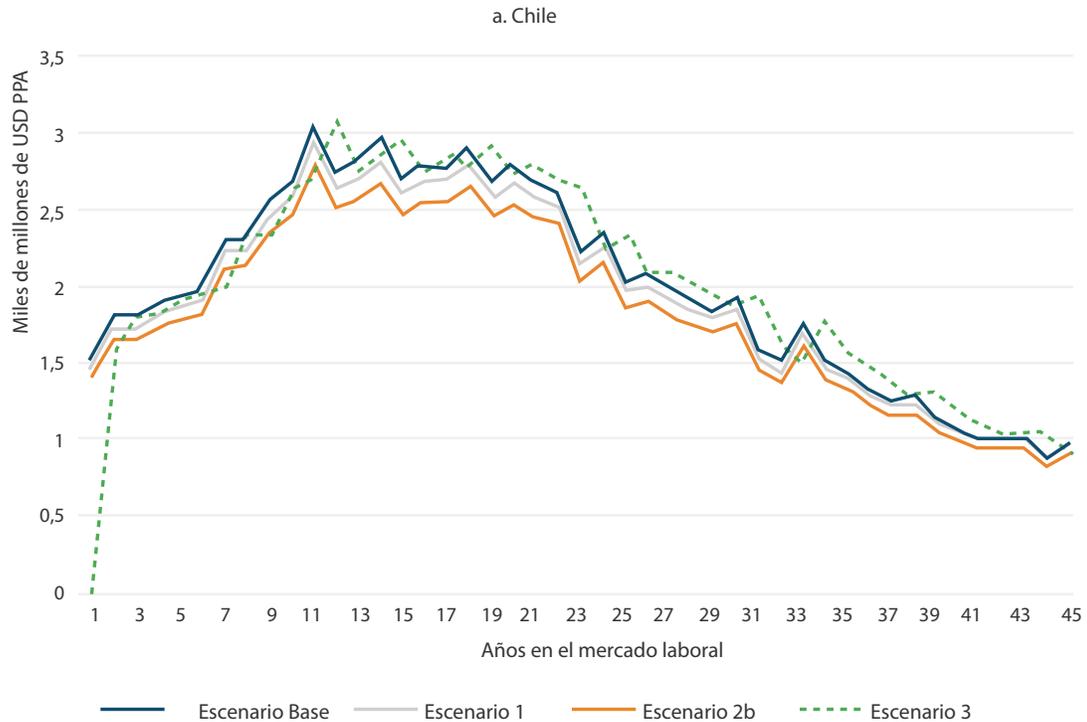
Source: Own preparation based on the results of the model.



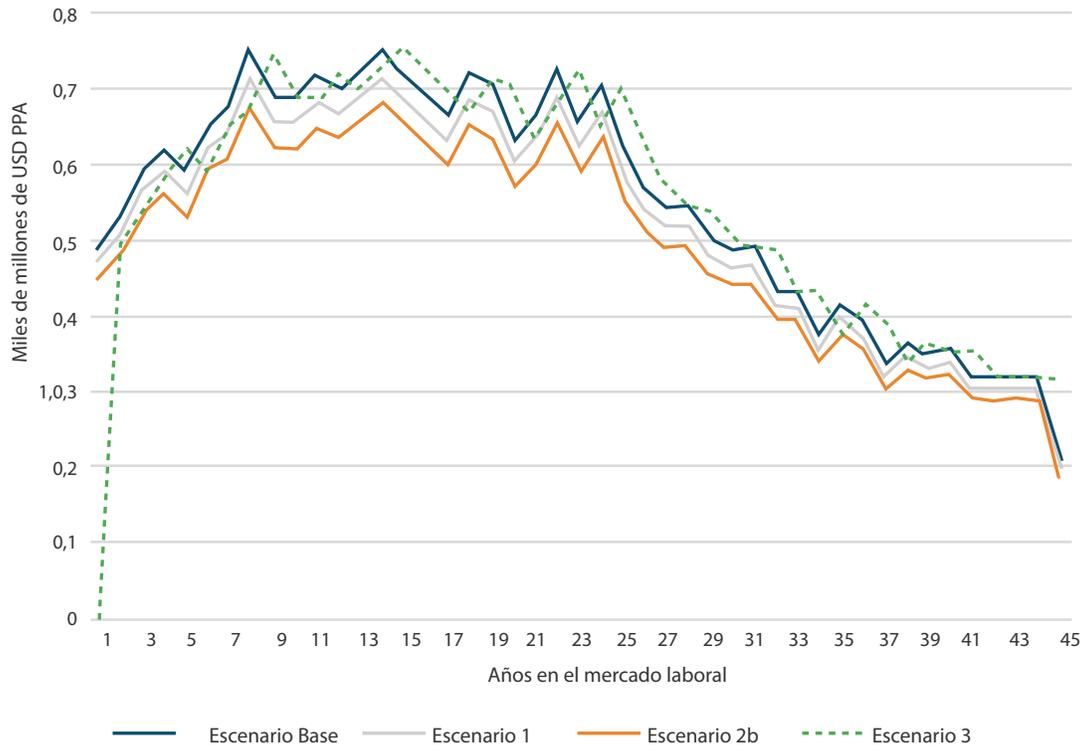
Annex D. Salary trajectories by country

Graph A.2

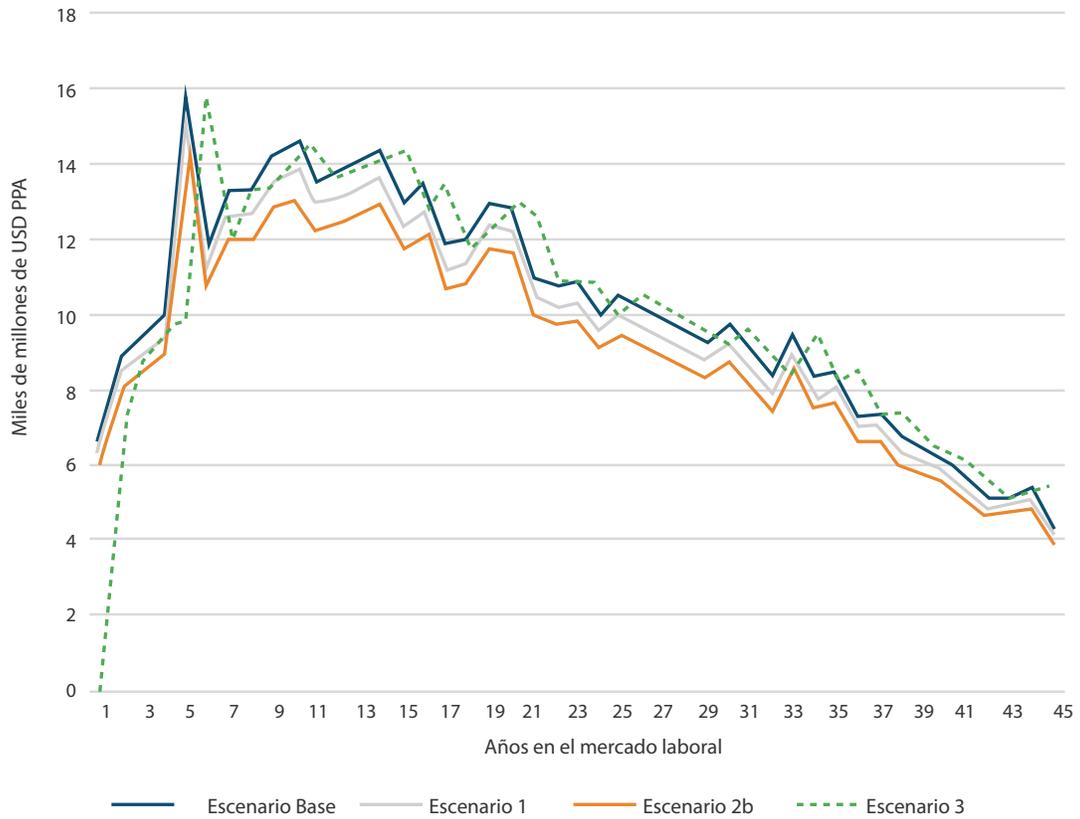
Salary trajectories of the total 2003 cohort under different scenarios, by country

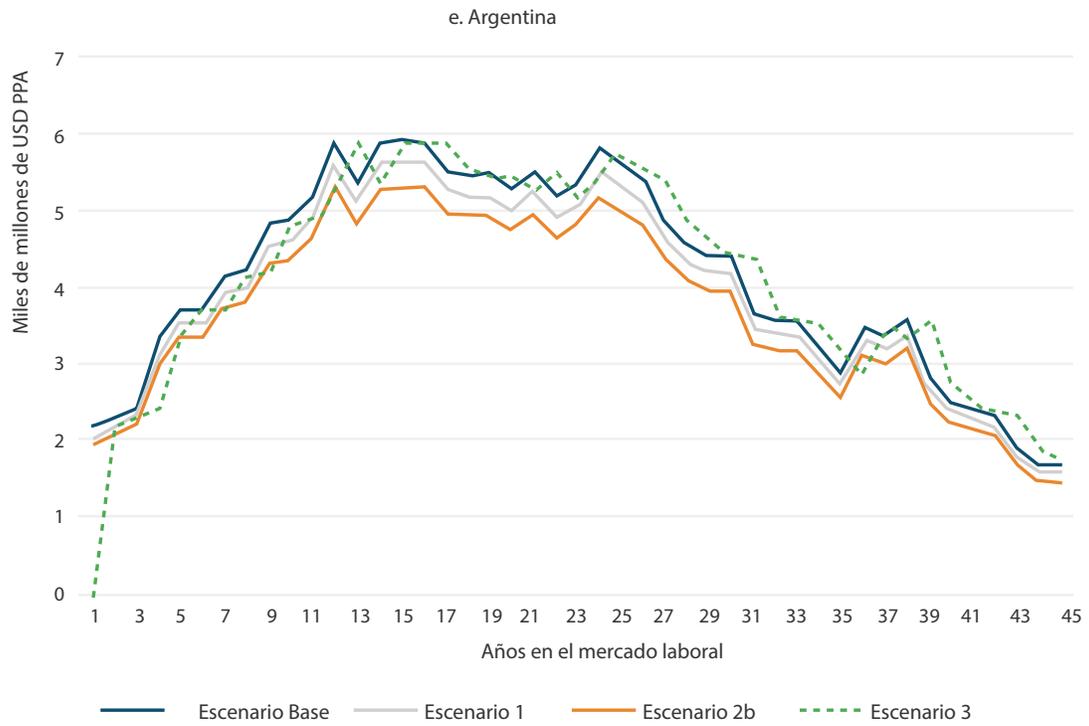


c. Costa Rica

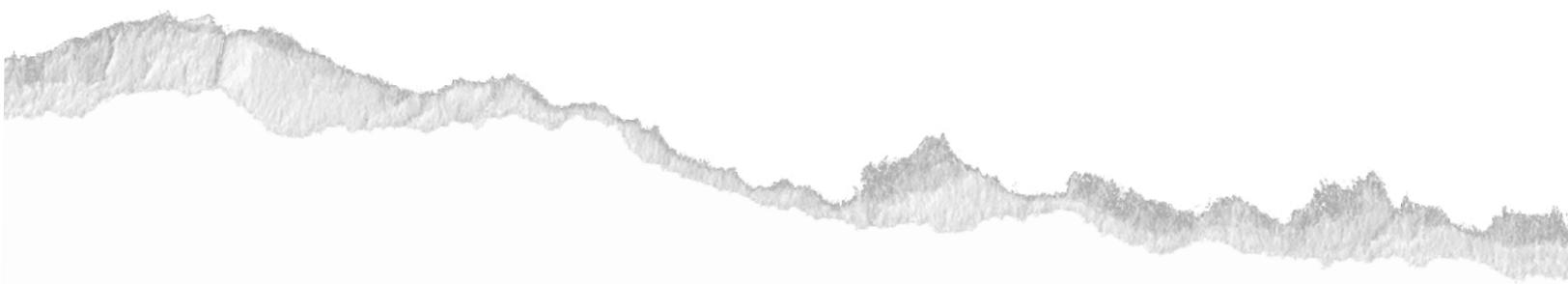


d. México





Source: Own preparation based on the results of the model.





How to reboot Education post-pandemic

Delivering on the promise of a better
future for youth

