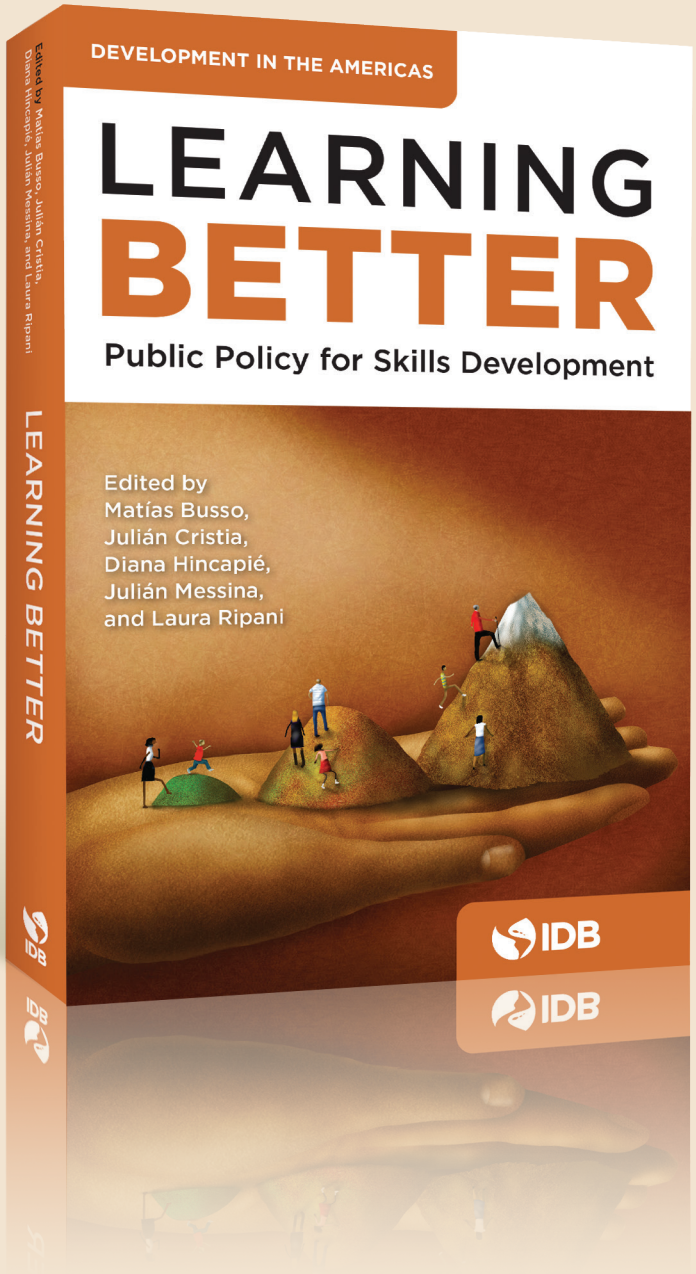
EXECUTIVE SUMMARY



Inter-American Development Bank

The *Development in the Americas* (DIA) series is the flagship publication of the Inter-American Development Bank (IDB). Each year the IDB presents an in-depth study of an issue of concern to Latin America and the Caribbean. This year's edition, titled *Learning Better: Public Policy for Skills Development*, contends that unless the region develops the skills of its labor force it will be hard pressed to compete in today's rapidly-changing, technological world. It recognizes that learning during the early years is vitally important but argues that learning opportunities are available throughout a lifetime. Importantly, it dismisses the notion that money is the only, or even the main, answer. Instead, it suggests that a review of the evidence can point the way toward cost-effective policies that better prepare citizens, firms, and countries to meet the challenges of an increasingly competitive economic environment.

This executive summary reviews the relatively low level of skills in the region and the unequal distribution of those skills within countries. It summarizes the state of spending on skills and the incentives to pursue skills development, and presents the case for evidence-based policies as the means to address the problem. Finally, it briefly sketches out some of the policy options available for boosting skills at each stage of the life cycle from early childhood through adulthood. Together, this synopsis and the table of contents provide just a taste of the rich information and valuable policy implications contained in this year's edition of the DIA and the SkillsBank (www.iadb.org/SkillsBank) web tool that accompanies it. SkillsBank is a web-based database that aggregates evidence on skills development policies throughout the life cycle.

Contents of the Full Report

To order *Learning Better*
Go to **Amazon.com**
Or download the book for free at **www.iadb.org/skills**
Access the SkillsBank at **www.iadb.org/skillsbank**

Learning Better for an Uncertain Future

The workplace is changing fast. In the developed world, robots substitute for workers on the assembly line; self-service cash registers replace cashiers at the supermarket; ATM machines supplant tellers at the bank; and ordering tablets substitute for waiters at restaurants. In both manufacturing and services, the demand for typical blue- and white-collar clerical jobs, which were traditionally mid-paying jobs, is declining in favor of machines. As scary as this shift may seem to some workers, robotization and technological change also offer job opportunities. Technological advances increase the productivity and demand for jobs that require abstract problem-solving, creative thinking, and social skills. Science, engineering, math, and technology jobs are in greater demand today than ever before.

Has this wave of technological change swept across Latin America and the Caribbean? The evidence is mixed. High-paying occupations that are intensive in abstract, inventive tasks are growing, but at a much slower pace. Middle-skilled jobs are disappearing but not nearly as fast as in developed countries. Behind these subtler changes is the slow penetration of new technologies. Low wages relative to the cost of technology offer fewer incentives for firms to adopt new technologies. At the same time, poor entrepreneurial and worker skills render technology adoption more challenging, and a productive structure biased towards unproductive, small- and medium-sized enterprises limits the penetration of machines in the workplace.

The changes in the labor markets of the developed world today provide a window to the future in Latin America and the Caribbean. Technological change may be slower in the region, but it is unstoppable. This offers the region a welcome opportunity to prepare for the changes to come. Coping with technological

change and reallocating workers associated with it is not easy, and governments in the developed world are struggling to find solutions. Developing a workforce that has strong and adaptable skills is paramount.

This book explores what governments can do to boost the skills of the population—a costly endeavor if done at the scale required to meet these challenges. It is, therefore, important to be able to provide the adequate skills in a cost-effective manner. Traditionally, the process of skills development was considered to occur primarily during childhood in schools. But this is not the case. One of the overarching messages is that cost-effective solutions to improve skills are available at all ages, from early childhood to adulthood. People are important to this lifelong process as skills development involves marshalling the efforts of various actors: families, teachers, school administrators, entrepreneurs, and firm managers. Similarly, learning spaces for skills development go well beyond the traditional classroom to homes, schools, job sites, and other training facilities. A public policy challenge is to coordinate different ministries that often work in isolation: social protection, education, labor, and finance. How can policymakers make sure they are getting it right? One path that should guide their efforts is the pursuit of evidence-based policies. This book shows how such policies can shed new light on what works in the development of a more skilled labor force today, and in the preparation of younger generations for the changes that are sure to come.

Unbundling Skills

Skills are capacities that can boost the productivity of individuals, allowing them to produce more valuable output with the same time, technology, and equipment. Even though these capacities can be innate or acquired, this book emphasizes skills—both general and specific—that can be developed over

the life cycle. General skills enhance the productivity of people in a broad range of occupations and can be classified in three main categories: socioemotional skills, cognitive skills, and academic skills. Socioemotional skills help people identify and manage their own and others' emotions (e.g., the ability to work in groups). Cognitive skills include long-term memory and pattern recognition as well as executive control, which relate to the coordination of several mental functions. Academic skills encompass facts, concepts, procedures, and strategies in subjects such as math, reading, and science, as well as computer skills. In contrast, job-specific skills increase productivity in a particular range of occupations, sectors, or firms.

A central message of this book is that skills are highly malleable throughout the life cycle, starting early in life at home guided by parents, continuing in childhood and adolescence in school led by teachers, and also during adulthood when individuals learn while doing their jobs or acquiring further education. At any age, there are several basic principles that underlie effective learning. The process begins with an activity adjusted to the level of the learner and important for that student. New knowledge should build upon the learner's prior knowledge and ultimately, practice makes perfect. Providing feedback during this process is crucial, and in the same way that training can enhance skills, failure to use certain skills can depreciate them quickly. Therefore, from a public policy standpoint minimizing the length of the transitions between school levels, between school and the labor market, and between jobs can be important for skills development.

Skills in the Region: Low and Unequal

Schooling has increased in the region since the beginning of the twentieth century. Today, the region has almost universal access to primary education; three out of four children enroll in

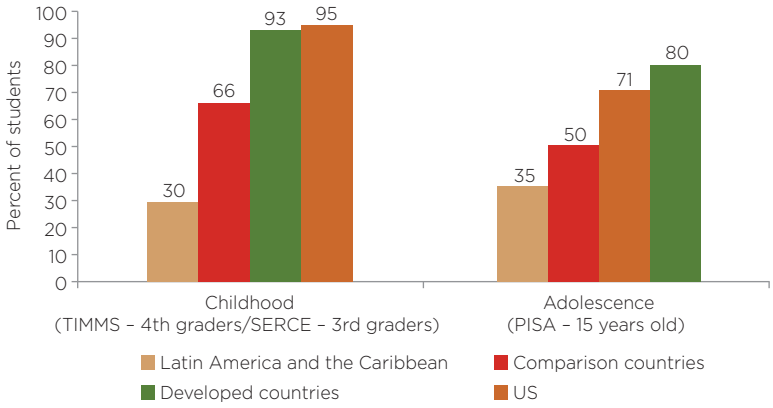
secondary school, and countries in the region are systematically expanding access to preschool and tertiary education. The average years of education increased from essentially zero in the early twentieth century to nine years of education today. However, while Latin America and the Caribbean galloped ahead to expand access, the rest of the world flew. Thus, the region has been left in the proverbial dust, unable to catch up with countries of similar levels of development in terms of schooling, years of education, and skills.

Despite much progress in terms of skills accumulation, compared to countries with similar levels of development, skills in the region are low at every stage of life (see Figure 1). Consider childhood. Most countries in the region have participated in a variety of international and regional assessments that allow for cross-country comparisons. Scores from the Trends in International Mathematics and Science Study (TIMMS) and the Second Regional Comparative and Explanatory Study (SERCE) were used to compare math achievement in countries in Latin America and the Caribbean with other countries. Only 30 percent of fourth graders in the region achieve a minimum standard of basic math skills. These students may have some basic mathematical knowledge, but they cannot add and subtract whole numbers, recognize parallel or perpendicular lines and familiar geometric shapes, or understand maps, and they cannot read and complete simple bar graphs and tables. In contrast, 95 percent of fourth grade students in the United States and 66 percent in countries with similar levels of gross enrollment and development reach the low benchmark for that grade and subject.

The lack of basic academic skills during childhood carries over into adolescence. In 2015, ten Latin American countries participated in the Programme for International Student Assessment (PISA). In a field of 72 participating economies, all Latin American and Caribbean countries ranked at the bottom of the proficiency distribution. More than 60 percent of the 15-year-old Latin American participants in PISA are unable to

FIGURE 1

Students that Achieve at least the Low Benchmark in Math on International Tests (percent)



Source: PISA and authors' calculations using TIMSS 2007 and SERCE 2006.
Note: To equate low benchmark rates across SERCE and TIMSS participating countries, the authors execute a crosswalk between the two tests by identifying levels of performance on SERCE that yield equivalent percentage of Colombian students meeting the TIMSS low benchmark (400 points). Low benchmark TIMSS: Students have some basic mathematical knowledge. Low performers PISA: cannot use basic algorithms, formulas, procedures or conventions to solve problems involving whole numbers. Countries in each category are grouped as follows: TIMMS/SERCE. Latin America and the Caribbean: Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Panama, Paraguay, Peru, and Uruguay. Comparison countries: Algeria, Armenia, Georgia, Hungary, Kazakhstan, Latvia, Morocco, and Tunisia. Developed countries: Australia, Austria, Denmark, England, Germany, Hong Kong, Italy, Japan, Netherlands, New Zealand, Norway, Scotland, Singapore, and Sweden. PISA. Latin America and the Caribbean: Brazil, Chile, Colombia, Dominican Republic, Mexico, Peru, and Uruguay. Comparison Countries: Albania, Algeria, Bulgaria, Croatia, Georgia, Hungary, Indonesia, Latvia, Macedonia, Montenegro, Poland, Romania, Thailand, Tunisia, and Turkey.

conduct more than the simplest math tasks for that grade, which means that they are likely to struggle using basic math concepts throughout their lives. In the Caribbean, the situation is much the same. Results from the 2013 Caribbean Secondary Education Certificate (CSEC), an assessment administered to secondary students in Barbados, Trinidad and Tobago, Jamaica, and Guyana,

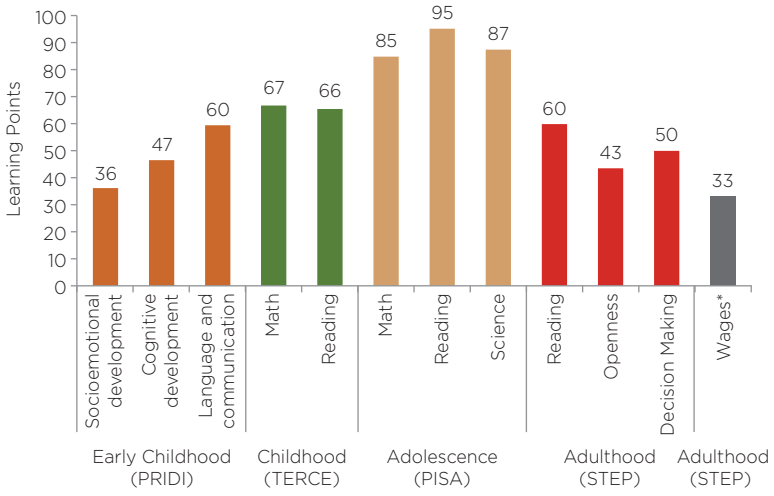
show that at the end of five years of secondary school only 34 percent of students have the skills required to pursue higher education. Despite the region's relatively poor performance, it seems to be making some progress. In Brazil, Chile, Mexico, and Peru—the only four countries in the region with reliable data for both 2000 and 2015—the share of low achievers dropped 14 percentage points both in math and language.

When individuals enter the labor market as adults, a lifetime of deficient skills accumulation can take a toll on their productivity in the workplace. Results from the OECD's 2015 Programme for the International Assessment of Adult Competencies (PIACC) reveal the very low level of skills among adults in Chile, the only Latin American country that participated in this round of the program (and the region's best performer on PISA). Only about 2 percent of adults in Chile achieve the highest levels of literacy proficiency, compared to an average 11 percent of adults across OECD countries. Adults who lack this level of proficiency cannot search and integrate information across multiple, dense texts or synthesize similar and contrasting ideas or points of view. Numeracy skills are similarly poor. Almost 62 percent of adults were not capable of performing tasks that require two or more steps involving the calculation of whole numbers, decimals, percentages, and fractions (39 percentage points worse than adults in the OECD).

Skills are not only low in the region when compared with other countries of a similar level of development but also unequally distributed between low- and high-income households. Figure 2 shows that the steep socioeconomic gradients in skills development start during early childhood. The Regional Program of Indicators of Child Development (PRIDI, for its Spanish acronym) collected data on children 24 and 59 months old in four areas: language and communication, cognitive, motor, and socioemotional development. The program collected data on nationally representative samples in four countries: Costa Rica, Nicaragua, Paraguay, and Peru. A child born in a high-

FIGURE 2

Gaps in Skills by Socioeconomic Status



Source: Authors' calculations based on Regional Project on Child Development Indicators – IDB; Third Regional Comparative and Explanatory Study (TERCE); PISA; and Skills Towards Employability and Productivity Survey – World Bank (STEP).

Note: First three surveys calculate the socioeconomic status of the child using household data on assets and dwelling characteristics. The gap refers to the difference between the 5th and the 1st quintile. STEP socioeconomic status was calculated using the maximum level of education of the parents and controlled for education, age and gender of the person. Point estimates show difference between parents with less than primary and parents with tertiary education.

income household scores between 40 and 60 more points on standardized tests measuring socioemotional, cognitive and language skills than a child born to a low-income household. To appreciate the magnitude of these gaps, the average 3rd grade student in the United States improves his performance by 40 learning points per year. These gaps persist throughout their lifetimes. During childhood, the gap in academic skills is about 66 points. During adolescence, gaps in math, reading and sciences are between 85 and 95 points, and during adulthood, gaps in academic and socioemotional skills range from 40 to 60 points. Not surprisingly, adults born to mothers with low education levels

earn 30 percent less than adults born to educated mothers. Skills gaps do not close in the region.

Not Just a Money Problem

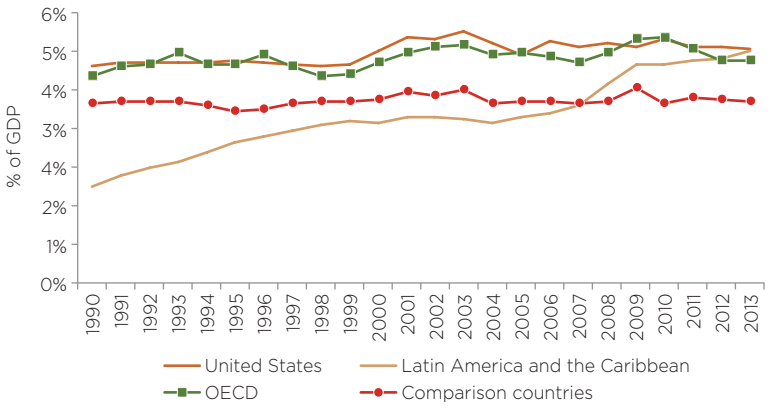
Why is Latin America and the Caribbean so behind in skills development? Apparently, money is not the only, or main, issue. Today the region spends on average 3 percentage points more of its GDP on education than it did 25 years ago (Figure 3). In fact, all countries in the region—from the Southern Cone to the Andean region to Central America and the Caribbean—increased their investment in education by at least 1.5 percentage points of GDP over the same period and on average spend as much of their GDP on education as developed countries (around 5 percent of GDP).

However, the region does trail more advanced economies in terms of total spending per student. In part, this is to be expected since an important share of the budget for education is spent on wages, and labor is more expensive (in absolute terms) in developed economies. The rise in education spending does not mean that Latin America and the Caribbean should not invest more resources in skills development. Some countries are still underinvesting and need to increase their spending on skills. But for most countries, given the current share of GDP spent on skills development, the room for improving skills outcomes by spending more is likely to be limited by the pace of economic growth. Therefore, governments should focus on how to spend current resources more effectively.

Families also seem to be spending significant amounts on skills development. Based on income and expenditure surveys, the average household in Latin America and the Caribbean spends about 7 percent of its budget on skills-related expenses. That share of household spending is more than in the United States where the average household spends about

FIGURE 3

Government Expenditure on Education as % of GDP



Source: Panel A: Authors' calculations based on World Bank Indicators.
Note: Countries are grouped as follows. Latin America and the Caribbean: Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Trinidad and Tobago, Uruguay and Venezuela. Comparison Countries: Albania, Armenia, Bulgaria, Hungary, Indonesia, Kazakhstan, Latvia, Malaysia, Morocco, Philippines, Poland, Romania, Thailand, Tunisia, and Turkey. When data is missing, it was linearly interpolated using the closest two data points. Other points were imputed using data on countries where the correlation was higher than 0.8.

6 percent. However, the proportion of students that attend private primary and secondary schools in the region is about 22 percent, compared to 8 percent in the United States. Therefore, households in the region are likely spending their money to compensate for either the deficiencies in access or quality of public schools, while in the United States private spending complements public spending.

Both public and private spending follow an inverted U-shape over the life cycle: measured as a share of GDP, more of this spending goes to primary and secondary education than to early childhood and tertiary education. This spending pattern reflects countries' priority to first expand primary school systems and after reaching a certain coverage level, move to provide more universal

access to secondary school. This pattern is echoed in private spending. Spending per family member increases from an average of 1 percent of the family budget for children aged 5 or less to about 2 percent during childhood through young adulthood. It then slips back to 1 percent after age 25 and 0.5 percent for people over 30 years old.

Not Just a Lack of Incentives Either

Why do families invest their scarce resources on skills development? Because they realize it's worth it. Returns to education are high in Latin America and the Caribbean (Figure 4). Each year of additional education in the region translates into an average 9.6 percent increase in real wages. By comparison, the real rate of return of stocks in the U.S. postwar period was 6.9 percent, and the long-term real return of bonds was merely 1.6 percent. Thus, from a purely financial viewpoint, education in Latin America and the Caribbean represents a tremendously smart investment decision.

Moreover, higher wages or wealth are not the only benefits of education. More educated workers are less likely to be unemployed and more likely to work at a job they enjoy. Education also helps individuals make better decisions about their health and reduces their engagement in risky behaviors, building trust in themselves and others in society.

However, going to school is not enough. The labor market clearly distinguishes between attending and completing a certain schooling level. Degree completion carries a hefty premium. The premium for completing 11 years of education is significantly lower than that for the 12 years needed to complete high school. In other words, starting, but not finishing, secondary school is virtually not rewarded by the market. Instead, graduation pays, literally.

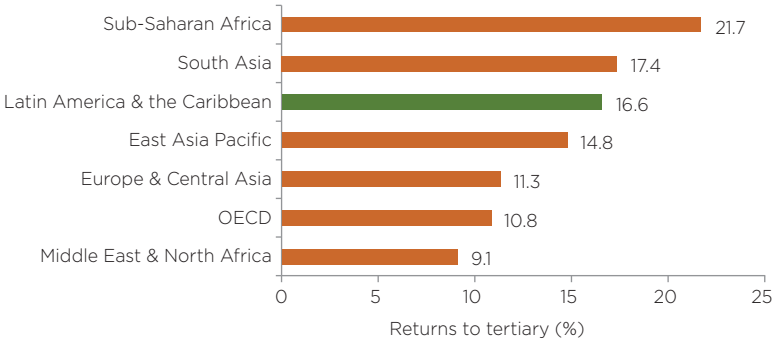
These average returns to education differ across schooling levels. The returns are particularly high among workers with

FIGURE 4

Returns to Education Around the Globe

a. Returns to a year of schooling by region

b. Returns to tertiary education by region



Source: Countries with available information after 2000 are selected from Montenegro and Patrinos (2014). If a country had more than one estimate, the latest year is displayed. Panel B shows returns to tertiary education compared to people with completed secondary school. Countries included in Latin America and the Caribbean: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Uruguay, and Venezuela.

tertiary education. In the case of Latin America, the returns to a year of tertiary education jump to 16.6 percent. But not all postsecondary education is created equal. Returns across types of institutions vary significantly. Some vocational training programs have high returns, while others do very poorly. In

postsecondary education, universities tend to provide higher returns than technical schools. Similarly, some fields of study pay more than others. For instance, engineering and other technical degrees are highly valued by the market, bringing high returns in Chile and Colombia. In contrast, education, social work, and design garner much lower average returns.

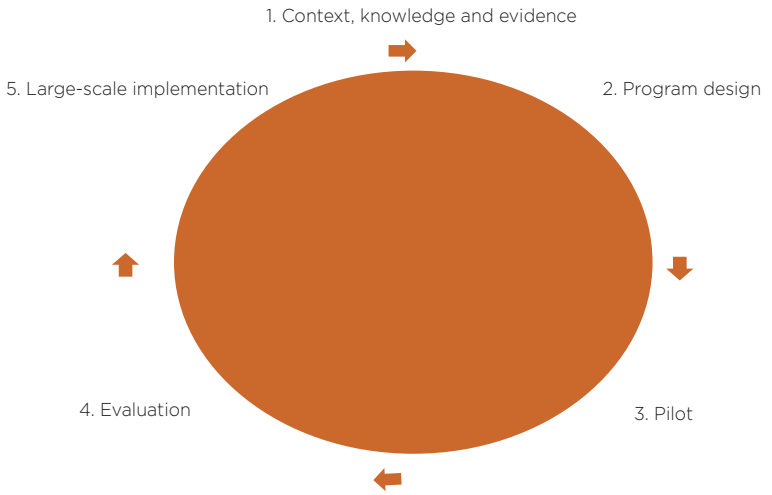
Beyond education, the market also values experience. Individuals become more productive as they gain more experience on their jobs because they acquire new skills through learning by doing or other forms of training. The experience premium, which fell during the last decade in Latin America, is still very high in the region. Longitudinal data from Brazil show that the labor market rewards general, sectoral, and firm level experience for all workers, but the returns vary significantly across educational levels. While more educated workers receive a higher reward for general and sectoral experience, workers without a high school degree benefit more from staying in the same firm.

Spending Better: The Case for Evidence-based Policy

The main bottlenecks for skills development do not seem to be just a lack of government spending or incentives to accumulate skills. Rather, what is needed is better spending on improving the quality of interactions at home and at school, supporting students to avoid risky behaviors and complete more years of education, and creating a better business environment that fosters learning by doing in the workplace. Blindly pumping money into the educational system would be unlikely to produce the desired results, even if it were feasible. Given weaker growth prospects in the region, further hikes in public spending seem unlikely. Thus, using existing resources more wisely is the key.

FIGURE 5

The Five Stages of Policy Decision Making to Launch or Expand a Program



How can countries be sure they are using their resources wisely? Figure 5 shows the ideal cycle of decision making that policies should follow from their inception to their final implementation at scale. To begin with, governments must eliminate the guesswork in policymaking, and, for this, rigorous evidence can point the way. Rigorous evidence provides a compass by exposing both successes and failures and providing a sound basis for decision-making. Armed with this knowledge, policymakers can avoid expanding programs that are ineffective at promoting skills acquisition, and scale up cost-effective programs. With evaluations of past experiences as their guide, governments can avoid mistakes and take advantage of opportunities to help their citizens learn better.

Governments would be more effective if they followed the evidence before launching new policies. A website that serves as a companion to this book can help in this endeavor.

The website SkillsBank (www.iadb.org/skillsbank) categorizes, standardizes, and presents evidence on policies that address key challenges in skills development. It compiles a wealth of information and puts it at the fingertips of policymakers. The website provides aggregate information on average effects of policies that tackle early childhood development, learning in primary and secondary school, and enrollment and completion in secondary schools. In addition to collecting and analyzing the data, it provides details about context and implementation that policymakers should consider when adapting interventions to their own countries.

Policies for Lifelong Learning

While people can learn at any stage in life, they do not learn the same things in the same way. Therefore, public policy must be developed to address the goals, capacities, resources, and peculiarities of each age group. The people and places associated with each stage vary and dictate the policy course to follow (Figure 6). Although country context matters, evidence from around the region and the world provides useful guidance on what works and doesn't work for preschoolers through adults.

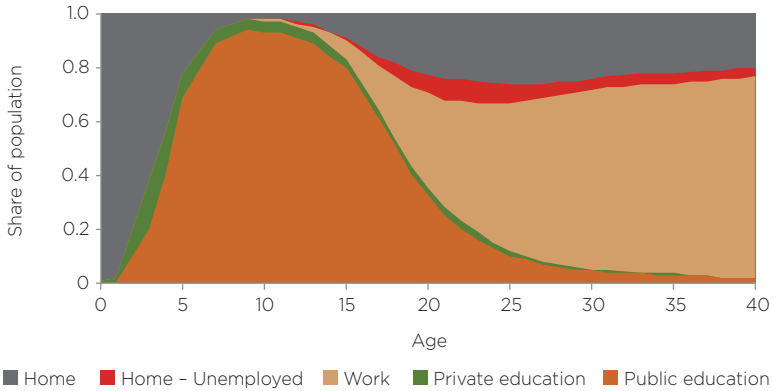
Early Childhood: Helping Parents Help Their Children

Cognitive and socioemotional skills start developing early. Thus, investing in early childhood development can have a major impact on skills development and on preparing children to compete in a changing technological world. These investments can also help reduce skills inequalities that constitute the breeding ground for the income inequality that so plagues Latin America and the Caribbean. Traditional policies in early childhood have centered on increasing access and quality of daycare

FIGURE 6

Where Skills Are Formed

Latin American and Caribbean regional average



Source: Authors' calculations based on household surveys.
Note: Latin American and Caribbean regional average was calculated as the unweighted mean of the country-level shares using last year with available data (2012-2014). Only countries with information regarding public and private education were included. Those countries are: Argentina, Bolivia, Brazil, Colombia, Costa Rica, El Salvador, Mexico, Peru, and Uruguay. Information for ages 0-4 only includes information for Argentina, Brazil, El Salvador and Uruguay. The share was computed as follows: each individual was considered to be "at home" if she was not enrolled in any educational institution and was not working and not actively looking for a job (gray); she was considered "in school" if she was enrolled in any educational institution (green/orange), she was considered at work if she was not enrolled in any educational institution and was working (yellow), and "at home unemployed" if she was not enrolled in any educational institution, not working, and actively looking for a job (red).

centers and preprimary education. Promoting enrollment in high-quality daycare centers and preprimary education, particularly for poorer families, can directly increase child well-being through improved cognitive stimulation. Moreover, increasing access to daycare centers and preprimary education can also expand women's labor force participation.

But there is an additional important policy option that has received little attention until recently: parenting programs. These programs help parents adopt caregiving practices that foster child development. The evidence indicates that parents are the

key actors for these youngest learners, and their homes are their best stage. It also shows that these programs can significantly improve child development at limited cost. Moreover, parenting programs are rare in the region, and hence, the opportunity to expand them is great.

Why do parenting programs work? Most parents care about their children, but many fail to adopt the best parenting practices because they do not know either the consequences of their actions, or the most effective approach to elicit desired behaviors. A landmark study in the United States analyzed 1,300 hours of interaction between parents and children, and found that in words heard, the average child on welfare was exposed to about half the words per hour as the average working-class child and fewer than one-third as the average child in a professional family. Moreover, the average child in a welfare family received mainly negative feedback (criticism of unwanted behavior) instead of positive feedback (praise of good behavior). This means that children in low-income households were receiving exactly the opposite of what development experts recommend. The current wisdom is that positive reinforcement (the carrot) is far more effective than negative reinforcement (the stick) from a developmental perspective.

Programs to change parenting practices may be particularly needed in Latin America and the Caribbean. The evidence suggests that many parents provide little cognitive stimulation to their children and favor punishment (even harsh corporal punishment) over praise. Some parenting programs, such as a well-known Jamaican stimulation study, seek to develop cognitive skills by encouraging parents to incorporate age-appropriate learning activities that usually require simple materials such as books and toys into their daily routine. Other parenting programs, such as Incredible Years, in operation in 18 countries, focus on improving child behavior. These programs teach parents to understand their children and their abilities,

and to develop appropriate rules, boundaries, and routines. This book reviewed these two different types of programs and found that they indeed improved child development. However, the evidence base on parenting programs is composed mostly of small-scale programs implemented in developed countries. Hence, the need is to evaluate large-scale programs in the region to determine whether the promise of parenting programs lives up to expectations.

Childhood: Improving Primary Education At Low Cost

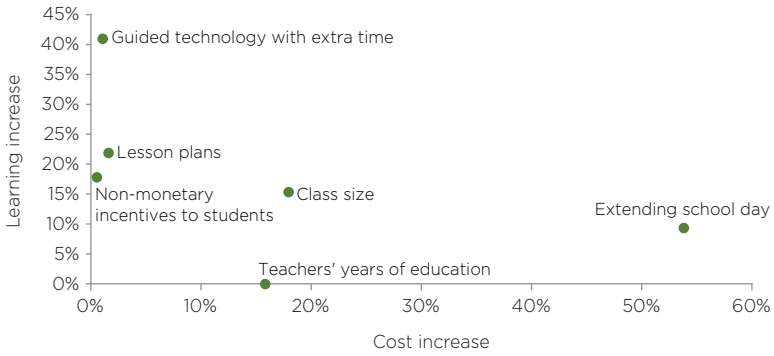
Developing academic skills in foundational subjects such as math and language is the focus during childhood, and mastering these basics is paramount to compete in today's world. Not surprisingly, schools are the main setting where learning takes place at this stage of life and teachers are the principal conduit. Poor learning in primary education is the biggest challenge. The average Latin American and Caribbean student lags more than one year behind what is expected based on the region's level of economic development. Clearly, the region will not be able to go toe to toe with other regions in productivity and output if its children begin with such a marked disadvantage.

The key question is how to improve learning while keeping education budgets manageable. On the plus side, decision makers have numerous policies to choose from. Unfortunately, the region has conducted few evaluations to learn what is effective and what is not. The review of the evidence revealed only 13 rigorous evaluations implemented in the region on how to improve learning in primary education—inexcusable in a region that spends about $80 billion a year on primary education!

However, international evidence can shed some light on promising areas worthy of local experimentation and evaluation. Once these areas are identified, Latin American and Caribbean governments must adapt interventions that worked in other

FIGURE 7

Learning Effects and Costs of Interventions to Improve Learning in Primary



contexts to their own environment and evaluate them for their actual effectiveness in their own settings.

There is great variation in the expected learning effects and costs of some relevant policy options that have been evaluated in countries around the world (see Figure 7). One important set of policies includes the big-ticket options of reducing class size, extending the school day, and increasing teachers' years of education. Some of these policies have shown evidence of effectiveness. Reducing class size from 25 to 20 students can boost yearly learning by 15 percent and extending the school day from 4 to 7 hours by 10 percent. On the other hand, increasing teachers' years of education has not shown to increase learning. But all these policies carry high price tags; spending surges range from about 20 percent for class size and teachers' years of education to a whopping 60 percent for extending the school day. Of course, a longer school day may bring other important benefits by freeing up parents' time so they can enter the labor market or work longer hours, and providing a safe environment for children. Still, policymakers searching for policy options that can increase learning at low cost had best look elsewhere.

Another important set of policies includes those that may not be on policymakers' radar but perhaps should be, given their effectiveness at enhancing student learning at very low cost: non-monetary incentives for students, lesson plans, and guided technology with extra time. Nonmonetary incentives can boost students' effort with simple, inexpensive strategies such as providing information about the high returns to education and organizing reading competitions across schools. Lesson plans provide teachers with detailed plans that can save them time and ensure that instruction is both effective and engaging. However, to be implemented, these plans have to be accompanied by capacity building, which can increase the cost of the intervention. Finally, another important intervention uses technology with clear guidance regarding the subject targeted, the software used, and the schedule of use during additional instruction time. These policies can generate important increases in yearly learning ranging from about 20 percent for nonmonetary incentives and lesson plans to 40 percent for guided technology with extra time. And costs are tiny—just a 2 percent increase in annual costs for each of these policies. The lesson is clear: to boost student learning in primary schools, policymakers should focus on low-cost options that have demonstrated evidence of effectiveness and assess the feasibility of implementing them in particular contexts.

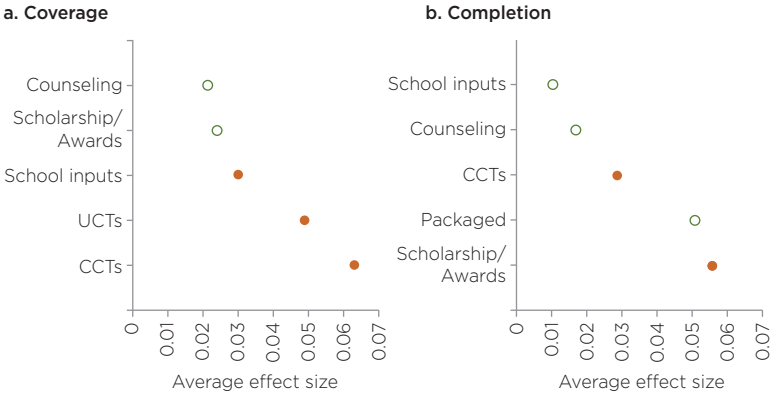
Adolescence: Multiple Challenges, Multiple Solutions

Adolescence is a difficult stage of life and skills development. Youth face multiple challenges at this age ranging from avoiding dropping out of secondary school, ensuring the development of key academic skills, and fostering socioemotional skills to steer clear of risky behavior. How can governments help adolescents and their families tackle these challenges? Various interventions in secondary school aim at increasing coverage or completion rates (see Figure 8).

FIGURE 8

Improving Secondary Education

Summary Effect Sizes by Outcome and Type of Intervention



Source: Authors' compilations.
Note: Estimates come from a random effects meta-regression. Empty circles indicate that the average effect size is not statistically significant. CCTs = conditional cash transfers; UCTs = unconditional cash transfers. Packaged interventions bundle together more than one type of intervention.

Historically, expanding the supply of tuition-free, public secondary schools and raising the compulsory years of education have been the main policies used to increase enrollment at this educational level. Yet in the last 15 years, conditional cash transfers have been the main policy instrument to stimulate the demand for secondary education and boost enrollment. Conditional cash transfers provide a monetary incentive to families, conditional on children enrolling (and attending) school. These programs have been extensively evaluated and, on average, these evaluations find that they have been quite effective at promoting enrollment, particularly for the initial stages of secondary education.

However, conditional cash transfers have been less successful in keeping adolescents in schools until graduation and in promoting learning, perhaps because they target credit constraints but do not deal with other reasons why youth

abandon secondary school. One reason why students drop out of secondary school is lack of interest in the curriculum. Some interventions have tried to convince students of the future benefits of secondary education by providing them with better, more personalized, and more accurate information about the returns to secondary school and university education. Other interventions provide information on funding opportunities. Scholarships and achievement awards provide direct incentives for school completion and rank first among promising mechanisms to promote high-school graduation. However, most of these interventions have taken place outside the region. Ser Pilo Paga, an innovative program in Colombia, is an exception. The program offers incentives for students to stay in high school and graduate by providing good students who are eligible with college loans that are forgiven if they complete their university degree. Preliminary results show improvement in the test performance of secondary school students, particularly among students from the lowest socioeconomic backgrounds. Other interventions such as curricular reform and offering extracurricular activities show promise though they have not been rigorously evaluated yet.

The roadmap to improve learning in secondary schools is murkier, in part due to limited evidence, especially from the region. Still, strategies that cater to the particular challenges faced during adolescence hold promise for boosting learning. Monetary incentives to students have shown evidence of effectiveness. Similarly, extending the school day—although costly and challenging to implement at large scale—have produced improvements in learning. Additionally, hiring teachers competitively, providing them monetary incentives tied to students' learning and supporting teachers' pedagogical practices offer promising results. Finally, the provision of nonmonetary incentives to boost students' motivation is also promising. In particular the program "Expande tu Mente!" in Peru, which seeks to convey the idea that the brain is like a muscle and

that training can increase intelligence, has shown positive effects with a tiny price tag: less than a dollar per student per year.

Socioemotional skills play a key role in avoiding risky behaviors with harmful long-term consequences. One important socioemotional skill involves the capacity of individuals to self-regulate and avoid escalating a minor altercation into a fight. This is particularly important in our region, where youth violence plagues communities and families. To promote self-regulation among low-income male adolescents, an NGO in Chicago designed an innovative program called "Becoming a Man." This program involves one-hour, weekly group sessions in which participants play games, discuss problems, and role-play situations with the final goal of avoiding automatic violent reactions under stress. Results of this intervention have been striking: violent arrests are down by half and secondary school graduation rates are up by about 15 percent.

Can these remarkable impacts on socioemotional skills be replicated in Latin America and the Caribbean? Only time, and more evaluations, will tell. Certainly, the program would have to be adapted to the region's cultural idiosyncrasies though its underlying principles may work across contexts. By way of example, another socioemotional program that promoted better parent-adolescent communication reduced behavioral problems in the United States; similar results were documented in a culturally adapted replication of the program in Ecuador (Familias Unidas). This example supports a more general conclusion: carefully designed interventions can promote the development of socioemotional skills among youth, significantly reduce risky behavior, and set them up for greater success in the future.

Higher Education: Balancing Access and Quality

Is money a constraint for the expansion of higher education? The region rapidly expanded the ranks of college graduates during the last two decades. Still, the region needs even

more highly skilled adults, particularly in the areas of science, technology, engineering, and mathematics (STEM), if it is to compete meaningfully in a technologically dominant world. However, attending college is costly. First, there is tuition. In some countries, college tuition is inexpensive or free, while in others it is a financial burden, particularly if students choose to attend private schools or private institutions are the only available option. Second, higher education often requires students to move away from home, adding housing and other living expenses to their overall costs. Finally, there are foregone wages.

The evidence shows that credit constraints are a major obstacle to college attendance in the region. At the same time, increasing high school completion has led to rising demand for higher education. The system's response has been to expand institutions and programs, sometimes in an organic, non-systematic manner. The returns to attending some of the region's postsecondary education programs are low or even negative. Thus, a key challenge for the region today is to continue expanding postsecondary enrollment and boost graduation without compromising the quality and relevance of programs and institutions. The policy options need to pivot around two pillars: alleviating credit constraints to facilitate access while putting quality assurance mechanisms in place to ensure quality and relevance.

Supply-side subsidies, in the form of public funding of public or private institutions, are effective at promoting enrollment but, because funding is typically not tied to student performance, they can lead to the provision of low-quality educational services. Demand-side subsidies, either in the form of scholarships or student loans, can also be effective at promoting access. However, they should be carefully designed to create incentives for good student outcomes and avoid concentrating financial risks among students.

In either case, these initiatives do not replace systemic, effective quality assurance mechanisms—something the region

is sorely lacking. In Colombia, for instance, only 13 percent of higher education institutions were accredited in 2016. These low levels likely reflect the voluntary nature of accreditation and weak incentives. Some other countries, like Argentina and Chile, have more mature systems of accreditation.

On-the-Job and For-the-Job Learning: The Importance of Firms

For youth and adults, the labor market is fundamental in the skills development process. The knowledge accumulated at home and in school during the formal education years become actual skills needed in the labor market. On-the-job training helps develop specific skills that can boost workers' productivity. Thus, while preparedness is important, the intensity and quality of the training received in the workplace is crucial. This is even more true in a fast-changing world, where updating skills is the key to workers' relevance and longevity. Starting today, and into the future, countries must invest in systems that eliminate boundaries between education and training in a lifelong learning approach.

Firm-provided training in the region is lagging. The share of firms that provide training is more than 10 percentage points less than in the East Asia and Pacific (EAP) region. This gap appears to be related to the type of activities undertaken in Latin American and Caribbean firms, with many more firms performing simple tasks that require little or no training.

Assessing the quality of training received on the job in Latin America and the Caribbean is complicated, because quality is often subjective and unobservable. The best indication of workers' skills development in the labor market is the evolution of their wages, which varies depending on the type of employer. Workers employed by larger firms in the tradable sector ("good firms") see their wages improve rapidly compared to workers employed in smaller firms engaged in nontradable activities

("bad firms"). Figure 9 shows that over a 7-year period in Chile, workers who had completed secondary school saw their wages improve by almost 20 percent if they were employed in good firms, as compared to 6 percent if they were employed in a small- or medium-sized enterprise operating in a nontradable sector. The wage gain of the high school graduate employed in a good firm is even larger than that of a college graduate employed by a bad firm, although she does not catch up completely over the 7 years. Thus, not only does the type of employer matter, but good employers may help close the skills gap workers bring to the labor market.

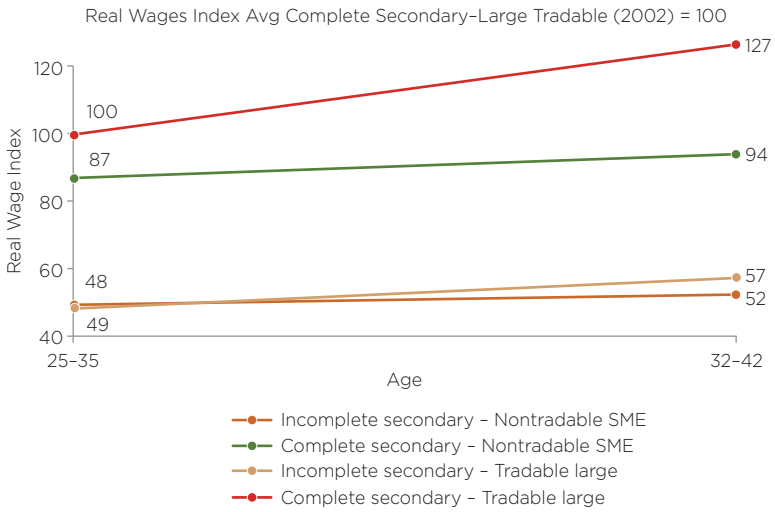
Public policy can boost the number of good firms over bad firms. The range of policies to achieve this objective is complex, including macroeconomic, regulatory, and competition policies, and is beyond the scope of this book. But public policy can also influence the likelihood of accessing a good firm. This is particularly important for young workers who enter the labor market with less developed skills. Having access to a good firm that provides training is the best way to increase a worker's chances of improving productivity (and wages) throughout her career.

Youth training programs have been widely used in Latin America and the Caribbean to improve the employability of disadvantaged youth, providing participants with a combination of vocational training and an internship at a firm in the private sector. Some programs include socioemotional skills training. These programs often succeed in helping disadvantaged youth access employment in good firms, although the gains are sometimes restricted to particular subgroups of the population. In general, these programs continue to positively impact the quality of employment (earnings, formal work) in the medium and long term and are cost-effective because they typically last a short time.

One shortcoming of youth training programs is their limited scope, given their focus on disadvantaged youth. Broader-

FIGURE 9

Chile: Evolution of Wages Conditional on Initial Employment



Source: Authors' calculations based on the panel built by Carpio et al. (2011) using Chile's Social Protection Survey for 2002 and 2009.
Notes: Only employed individuals in both 2002 and 2009 are depicted. Real hourly wages expressed as an index where the base (equal to 100) is the average wage in 2002 of individuals with at least secondary complete education working in large firms (with more than 50 employees) in the tradable sector. The categories are based on education level and sector of employment in 2002. Tradable sector includes Agriculture, Hunting, Forestry and Fishing; Manufacturing; Financial Services; Transport and Communication Services. Non-Tradable sector includes Electricity Gas and Water Supply; Construction; Retail, Hotels and Restaurants; Community, Social and Personal Services.

reaching programs should also be explored. Apprenticeships have a positive impact on both youth employment and firm productivity in several OECD countries, but have seldom been used in Latin America and the Caribbean. Several key differences stand out when comparing traditional youth training programs in the region to apprenticeships: (i) apprenticeships tend not to target youth with the lowest skill base; (ii) they offer longer, more intense training and hence are costlier, and (iii) they are co-financed by the private sector. These larger

scope programs are promising avenues for public policy experimentation.

An evidence-based set of policies aimed at improving the skills of youth and adults should be part of a strong and structured skills development system that brings the education and training system closer to the needs of employers. The simplest way to do that is for the public and private sectors to work together to prepare workers with the skills they need today and in the future. As in other periods of the life cycle, but perhaps more urgently at this stage, innovation and experimentation in Latin America and the Caribbean are key to finding and offering the right solutions for the many workers in the labor market, anxious to improve their lives with a good job.

Toward Better Learning across the Board

Better learning is key for Latin America and the Caribbean to compete in the global economy today and in the future. Finding effective interventions and investments in skills is a necessary condition to reap the benefits of technological change and avoid the risks of being left behind, incapable of producing high value-added goods, and unable to join the ranks of high-income regions.

Learning must occur at all ages, in many settings, taking better advantage of existing resources. Parents must learn how to better prepare their children to be school-ready. Young children must learn fundamental skills that will be the basis of their future learning and of the skills they will need in the labor market. Adolescents must develop the academic and socioemotional skills that will allow them to become responsible, productive adults. Teachers at all educational levels must learn how to bestow knowledge in a manner that

inspires students to stay in school and prepares them for the workforce. Managers must learn how to train their workers for the tasks at hand and motivate them to raise the productivity of their firms.

Clearly, skills development is not a linear process in which skills are built sequentially and progress smoothly from one stage to another. Nor are the stages of skills development compartmentalized and isolated from each other. While some actors may predominate in each stage, which may take place largely in one setting, nothing is exclusive about the people and places associated with any one phase of skills development over the life cycle. The process is as intertwined, complex, and unpredictable as life itself. Parents, teachers, and employers may pass in and out of this process multiple times, opening—and closing—the doors to learning. Adolescents may enter the workforce well before they had planned, or people may return to formal education late in life. While these twists and turns may blur the lines and interject numerous caveats, they do not negate the general characteristics and trends that predominate in each age group and are the organizing elements of this book.

Given the complexities of the learning process, the task of policymaking for skills development is daunting indeed. Policymakers are on the front lines of this learning process, struggling with how to make all this happen with targeted, well-designed, evidence-based policies that fit within their budgets. Learning from the successes and failures throughout the region and the world, governments can help put their citizens on a better learning path that prepares them, their firms, and their countries to compete in today's dynamic, opportunity-filled economic environment.

"This state of the art report stands out in three respects. It illuminates the multiplicity of learning opportunities—and educational challenges—at all stages of the life cycle. It recognizes that underinvestment is not the primary institutional failure hindering human capital formation in Latin America. Finally, it advocates for the most effective overarching policy: credibly and dispassionately experimenting to discover what works in education, training, and life-long skills acquisition."

David Autor
Ford Professor of Economics, MIT

"As the world of work changes in fast, unpredictable, and uncertain ways, nations must design interventions that allow everyone to acquire and maintain social, emotional, cognitive, and academic skills. Everyone is, literally, everyone. Because now learning never stops. This book is about interventions to foster skills learning that involve parents, teachers, children, adolescents, youth, adults, managers. And it is for policymakers. Read it and use it, and you will learn the importance of using the evidence of what we already know to effectively inform the design of those interventions."

Jaime Saavedra
Senior Director and Head of the Global Practice of Education, The World Bank
Ex-Minister of Education, Peru

"Raising skills levels in Latin America and the Caribbean is an urgent task. For those interested in pursuing it, this book provides an expansive, excellent resource. It situates the challenge in a global context, elucidates binding constraints, and reviews cost-effective interventions."

Miguel Urquiola
Professor of Economics and International Affairs, Columbia University