



Building Quality Education: A Pact with the Future of Latin America

COMMISSION FOR QUALITY
EDUCATION FOR ALL

Fundación **Santillana**

 **THE DIALOGUE**
Leadership for the Americas

Building Quality Education: A Pact with the Future of Latin America

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EDUCATION FOR ALL

Anónimo

Construyendo una educación de calidad : un pacto con el futuro
de América Latina / Anónimo. - 1a edición especial - Ciudad
Autónoma de Buenos Aires : Santillana, 2016.

224 p. ; 24 x 15 cm.

Edition for the Inter-American Dialogue
ISBN 978-950-46-5025-6

1. Calidad de la Educación. 2. Política Educacional. I. Título.
CDD 379

ISBN: 978-950-46-5025-6

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Av. Leandro N. Alem 720 (C1001AAP)
Ciudad Autónoma de Buenos Aires
República Argentina

Queda hecho el depósito que marca la ley 11.723
Impreso en Argentina. *Printed in Argentina*



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Preface

The Commission for Quality Education for All is an innovative, high-caliber initiative of the Inter-American Dialogue, created to support profound educational change in Latin America by mobilizing the public and private sectors, the media, and civil society. Chaired by former Presidents Ernesto Zedillo of Mexico and Ricardo Lagos of Chile, and comprising 12 Latin American leaders, the Commission began its work during the Inter-American Dialogue's Sol Linowitz Forum in November 2014. For more than two decades the Dialogue has stressed the importance of education for the region's development and has made significant contributions in the field. The Commission represents the continuation of those efforts.

The Commission's purpose is to raise the profile of the issue of poor quality education in Latin America, and propose an agenda for educational change that inspires the interest and commitment of all stakeholders. In addition to raising awareness, the Commission strives to forge alliances between sectors, identify the progress made in recent years, and make a series of practical recommendations that serve as a starting point for the educational transformation that the region so much needs.

This report has three parts. First, it presents an overview of the current state of education in Latin America. Second, it analyzes six priority areas for improving education quality. And third, it proposes the creation of a social pact that will bring about a profound and lasting change in the region's education systems. This endeavor is a product of the Dialogue's Education Program, which aims to improve education

quality and foster skills development throughout Latin America.

I would like to express our thanks to the Commission's co-chairs, Ernesto Zedillo and Ricardo Lagos, for their leadership, as well as to the 12 members of the Commission for their commitment and support. I would also like to recognize the invaluable role of Ariel Fiszbein (director of the Dialogue's Education Program), who conceived the idea and provided the project's intellectual leadership and direction. Federico Sucre and Belén Cumsille (associates of the Dialogue's Education Program) were an integral part of the drafting team and made valuable contributions to the report. I also want to express our gratitude for the support of Fundación Santillana, Laureate International Universities, and Grupo Pantaleón S.A.

Michael Shifter,
President
Inter-American Dialogue
August 2016

Foreword

Development with equity and in democracy requires that each and every Latin American child receive a quality education. Latin America has made significant progress in expanding the coverage of its education systems, allocating a growing share of public spending to make that possible. Despite the substantial efforts made, however, learning deficits remain alarming. The results of national and international tests demonstrate that Latin America is lagging, not only relative to the rest of the world but also relative to our own standards. In an age of increasing globalization and accelerated technological change, educational gaps pose a vital challenge to the region's economies and societies.

Our countries are at a crossroads. Without a substantial and sustained improvement in the quality of education, the huge efforts made to increase enrollment will not bear the desired fruit. The region's economic, social and political future depends on our societies and governments moving forward with an ambitious agenda on educational quality. Improving the quality of education makes the difference between stagnation and development.

In this report we propose reforms in six areas that we judge to be crucial for transforming the region's education systems. (1) early education, (2) teaching excellence, (3) learning assessment, (4) new technologies, (5) the relevance of education, and (6) sustainable financing. In each of these areas we examine where Latin America is now and, on the basis of the best international evidence available, we discuss what can be done to ensure that the countries of the region reach their educational potential.

The report proposes a series of reforms that are not simple. To bear fruit, they require human and financial resources, political commitment, and persistence over time. Change should offer room to experiment, evaluate and adapt in line with each country's needs. Change also requires a high degree of consensus and social participation, including the involvement of educators, students and parents.

To that end we propose the creation of social pacts for quality education that make clear the aims of the reforms, set targets and resources, and establish a mutual responsibility mechanism. The idea is to promote long-term strategies that transcend changes in government, establishing mechanisms to ensure that the agreements translate into concrete actions and offer the time needed to achieve the desired results.

We are pleased to have worked with such a diverse and extensive group of Latin American leaders from different sectors, to whom we offer our gratitude for their generous collaboration. Most particularly we want to express our appreciation to Ariel Fiszbein, the driving force behind this report and also its director and main author, for his superb and dedicated work.

Whereas in the twentieth century the challenge was to expand the coverage of education systems, today the challenge is to provide a quality education for all. This is the only way in which we will be able to foster the development of the whole region with equity and in democracy. This report is our modest contribution to the crucial debate on the future of education in the region. We reaffirm our commitment, and that of the Inter-American Dialogue, to educational reforms that strive for better quality. It is also a respectful call to our fellow citizens to cast off complacency, so as to move forward

more resolutely with the educational transformation that the future of Latin America demands.

Ricardo Lagos and Ernesto Zedillo

COMMISSION FOR QUALITY
EDUCATION FOR ALL

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Executive Summary

Latin America has made significant progress in increasing coverage at all levels of the education system by investing resources, and thus has been able to include ever more children from the most marginalized sectors in schools. The efforts made by governments and citizens throughout the region have begun to bear fruit.

National and international tests, however, indicate that learning levels are very low and uneven. Latin American children and youths are simply not learning at acceptable levels. Despite the improvements evident in some countries of the region, Latin America is still lagging behind the rest of the developed and emerging world. There is mounting evidence that the education system is not building the skills that have to be developed for the twenty-first century, nor the human resources needed to raise productivity and foster growth with equity.

Without substantial improvements in learning levels and skills building, it will be hard to translate the rising enrollment levels into the life quality improvements to which Latin America's citizens aspire; they are very likely to be another source of frustration rather than of economic and social progress.

There is more widespread acknowledgment that it is imperative to improve education quality, but inertia within the systems is too strong. Overcoming that inertia requires resolute reform efforts that bring about deep and lasting change. That calls for financial, human and political resources to be devoted to the kind of reforms that have the most transformative effects.

How can education be transformed, thereby improving learning levels? What are the “Gordian knots” that Latin American countries have to tackle in order to improve educational quality? On the basis of a careful analysis of the state of education systems in the region and the lessons learned from international experience, this report proposes reforms in six areas of education policy to deliver a deep and lasting improvement in quality.

Early childhood development

Children, especially those from vulnerable households, arrive at primary school with very substantial cognitive deficits that are a significant source of school failure. The technical evidence is abundantly clear: the basic skills that determine the capacity to learn are developed early in life. The development gaps that open up before the start of schooling amass deficits that are very hard to eradicate.

This evidence clearly reveals the importance of a strategy for early investment in children up to the age of five. The idea is to lay the groundwork for learning even before children start primary school, so as to underpin improvements in the performance of the Latin American school system— the core issue of this report.

To meet the goal of childhood development and thus help close the learning gaps in the schools, the change strategy must give priority to high-quality child development programs, as regards both early education and also support, care and stimulation programs for children. In this context, quality should be understood mainly in terms of the nature and intensity of the adult-child interactions that form the basis of children’s cognitive, language, motor and socioemotional development.

Moving forward in a more concerted manner in this area demands intersectoral coordination, activities geared not just to children but also to families, adequate financing, and properly qualified and supervised human resources.

Teaching excellence

Teaching in Latin America is marked by modest levels of knowledge, somewhat ineffective pedagogical practices, and problems of motivation and management. It will be impossible to improve the quality of education unless these problems are addressed.

To attain excellence, teaching must cease to be a semi-profession and become a prestigious vocation with recognized performance standards. In general these changes are controversial (very probably more than any of the other matters discussed in this report), partly because they affect vested interests. Nonetheless, a growing number of Latin American countries have begun to reform their teacher policies in an effort to create conditions in which excellence thrives. Their experiences, and those of countries in other regions that have taken the same path, suggest there is no single prescription to implement teacher policies: all these policies can be implemented in different ways.

While there are few rules about the “how,” there are hardly any doubts about the “what.” A radical improvement in teaching quality demands a multiple strategy that attracts better candidates to study teaching, trains them better at undergraduate level and in their professional development, rewards them as professionals, and manages and assesses their practice more systematically, with emphasis on child learning as a critical factor. School leadership, moreover, must be

strengthened, with better trained principals who are empowered to direct and guide teachers.

Learning assessments

It is crucial to have high standards that set clear expectations for everybody (parents, students, teachers, administrators). Learning assessments are the central tool to set these expectations and guide actions to improve educational quality.

Large-scale, standardized learning assessment systems in Latin America have gained in visibility and strength, and have assumed a prominent role in the general debate on educational quality. These systems, however, still have not become the core of education management that the region needs. Most particularly, the schools themselves should become active users of assessments and should translate them into information that can be used to improve their educational endeavors. Greater efforts have to be made to report the assessment results and use them for management purposes at all levels, creating a real assessment culture.

A very positive aspect of the past decade's experience has been the increasing participation in international tests, a practice that Latin American countries should continue and broaden.

The credibility and sustainability of assessment systems depends on stable governance arrangements that guarantee their technical soundness. There has been some significant progress in this regard, but the good governance of assessments continues to pose challenges in many countries. Latin American countries' experience confirms that building an effective educational assessment system to inform and support

quality improvements is a laborious and complex undertaking that calls for an alignment of learning goals, standards, the curriculum, and other key matters such as teacher training.

New technologies in education

Latin America's education systems still have a very traditional approach. Most students' experience of education is not very different from that of previous generations.

Innovation holds great promise for educational models but often it is interpreted simplistically, such as introducing computers into the schools. The evidence indicates that, without a change in pedagogical models, investing in computers and connectivity does not affect learning attainment. By contrast, as instruments of teaching support in the context of a modernization of teacher training and classroom management, new technologies can play a positive role. They can also help close the widening gap between the interests of the students and the teaching methods and contents prevailing in schools today.

The available evidence on the effectiveness of technologies to improve student learning does not currently warrant very costly investments, especially in poorer countries. Less expensive alternatives to the mass distribution of computers (such as distance learning or computer laboratories) might be less attractive politically, but are probably more cost-effective. The approach to educational technologies must shift from a short-termist policy of simply providing students with computers, laptops and tablets, to one that creates links between access to the equipment and guided-use strategies, with specific contents by level and subject, and with clear targets based on measurable learning indicators.

A relevant education

Apart from the known problem of poor quality evident from deficient results in academic tests, Latin America's education systems face challenges related to the study programs' limited relevance, which affects graduates' ability to perform in a complex and increasingly globalized world. Latin American youths not only have difficulties in areas such as math and language, but also in less traditional cognitive skills such as analytical capacity or problem solving, as well as technical and socioemotional skills.

To make education more relevant and facilitate graduates' entry into the labor market, Latin America must modernize middle and tertiary education to cultivate the development of skills demanded by employers. This entails taking a broader view of what constitutes a quality education, one that emphasizes the relevance of the learning acquired and the skills developed.

The challenge, then, consists of putting greater emphasis on skills for the twenty-first century in secondary education, and modernizing technical education and professional training programs at secondary and tertiary levels so that they respond to the demands of the world of work. This requires closer links between the education system and businesses, as well as information systems that make it possible to assess results, including those arising from the labor market.

Financing for results

Efforts to improve educational quality must unfold within fiscally and socially sustainable funding arrangements. Latin American societies are voicing their growing interest

in education and are increasing their financial investments. In the past decade there has been a significant increase in public spending on education, which now accounts for an average of 4.8 percent of GDP and 16.9 percent of public budgets.

Education is still under-resourced in several Latin American countries, which should make more effort and show greater public commitment to financing the sector. At the same time, efficiency in the use and allocation of resources is a general challenge in the region's education systems.

The need to expand coverage in early childhood development and at the tertiary level, as well as to give primacy to programs and projects that offer higher returns in terms of quality, will require an additional fiscal effort in some countries and greater flexibility in resource allocation for education in all countries. In view of the region's less positive economic and fiscal outlook, in the coming years education systems will be forced to become more efficient in allocating and using resources. It is critical that priority be given to cost-effective investments and those that benefit the most vulnerable, strengthening resource-management so as to attain results.

Towards a social pact for quality education

The reforms proposed are not simple. They require resources, political commitment, and persistence to bear fruit. Change is unlikely to be linear: there must be room for trial and error (experimentation, evaluation and adaptation). Nor can change be imposed from the top down in an authoritarian way; it calls for high levels of consensus and social participation, including the involvement of educators themselves.

Hence it is essential to forge real social pacts for quality education that make clear what the aims of the reforms are, set targets and resources, and establish a mutual responsibility mechanism to promote long-term strategies that transcend changes in government and offer enough time to achieve the desired results. It is not solely a matter of reaching formal agreements, but of establishing mechanisms to ensure that those agreements will lead to concrete actions that are sustained over time.

The social pacts needed to improve the quality of education call for action on three fronts: targets that serve as guidance and direction, leadership that is committed to the targets in order to turn ideas into realities, and social participation mechanisms that guarantee the sustainability of these efforts.

Drawing up and implementing these pacts is a highly political process. The good news is that, to a large extent, the seeds have already been planted. Now they have to be fed and protected so that they can grow and thrive over time.

I. The Challenge

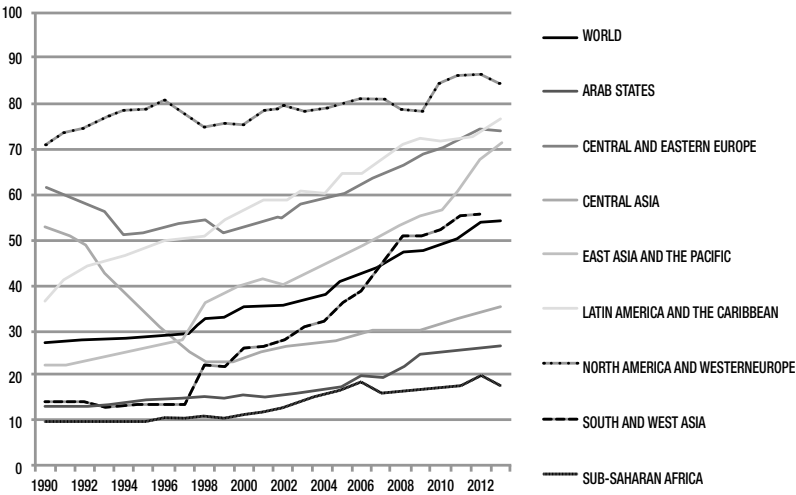
Progress on education in Latin America has been mixed over the past 15 years. On the one hand the region has made significant progress in enrolling children and youths. On the other, however, learning levels remain extremely low. More years of education are not reflected in greater knowledge and better skills. Youths are not being properly prepared to enter the labor market and contribute to growth and productivity. This chapter offers a brief overview of the state of education in Latin America.

Increasing enrollment

Educational coverage has expanded in Latin America, especially at the preprimary level. Between 1999 and 2012, the share of children enrolled at preprimary—measured by the gross enrollment rate—grew from 54 percent to 74 percent (see **Figure 1.1**) (UNESCO, 2015). Guatemala, Venezuela, El Salvador and Costa Rica are among the countries with the highest enrollment growth rates. Thus, while less than half of children attended preschool institutions in 1999, more than 60 percent did so in 2012 (UNESCO, 2015). This progress puts Latin America above the world average, but there are still wide variations within the region. In Paraguay and the Dominican Republic, for example, in 2012 the gross enrollment rate at the preprimary level was still below 40 percent.

Progress was also made at the primary level. The net adjusted enrollment rate grew from 87 percent in 1990 to 93 percent in 1999. Since then it has grown by only a percentage point, to 94 percent in 2012 (UIS, 2015a). This slowdown in progress towards making education universal is a trend that

Figure 1.1.
Gross Enrollment Rate in Preschool Education
in the World and by Region, 1990-2012



Source: UNESCO database (UIS). Gross enrollment rate in preschool.

Latin America shares with other regions of the world (UNESCO, 2015), and might arise from the difficulties of reaching the most marginalized sectors of society (UNESCO, 2013). Despite this, in the past decade Latin America has been notable for improving access to primary education among the most disadvantaged children. The six countries in the world with the greatest increases in primary school completion rates among children from the poorest quintile include Guatemala, Bolivia and, in first place, Nicaragua—whose rate rose from 16 percent to 66 percent. There were also improvements in reducing repetition and dropout rates. For example, the proportion of children of all ages that repeated a primary school year fell from 12 percent in 1999 to 5.7 percent in 2012 (UNESCO, 2015).

An upward trend in coverage is also apparent at the secondary level. The secondary net enrollment rate grew from

59 percent in 1999 to 73 percent in 2012—a significant improvement (UIS, 2015b). Moreover, a large majority of countries have high rates of school progression between the primary and secondary levels. Indeed, in only four countries is the progression rate below 90 percent; in 2010 the average was 93 percent (UNESCO, 2013). Enrollment in higher education has also grown, from 10.4 million students in 2000 to 23 million in 2013. Countries such as Chile, Colombia, Cuba, Paraguay and Venezuela doubled their gross enrollment rates.

These figures, however, mask serious problems, especially high repetition and dropout rates in secondary school. For example, the average repetition rate in secondary education fell only slightly from 11.3 percent in 1999 to 9.4 percent in 2012. Meanwhile, the average dropout rate barely declined, falling from 17.8 percent in 2000 to 15.5 percent in 2010. This means that almost one in every six of the region's secondary school students dropped out every year (UNESCO, 2013). Overall, in 2010 just half of Latin American youths aged 20 to 24 had completed secondary education (UNESCO, 2013).

Who do so many youths drop out of school? An Inter-American Development Bank survey of youths in eight countries of the region found that, while child labor and household chores are factors that affect early school leaving, the main factor in secondary school is lack of interest. The study suggests that the source of this demotivation is that youths “are not convinced that education will give them a better future” (Cabrol et al., 2014). In other words, “the perception of education and its value influence early school leaving.”

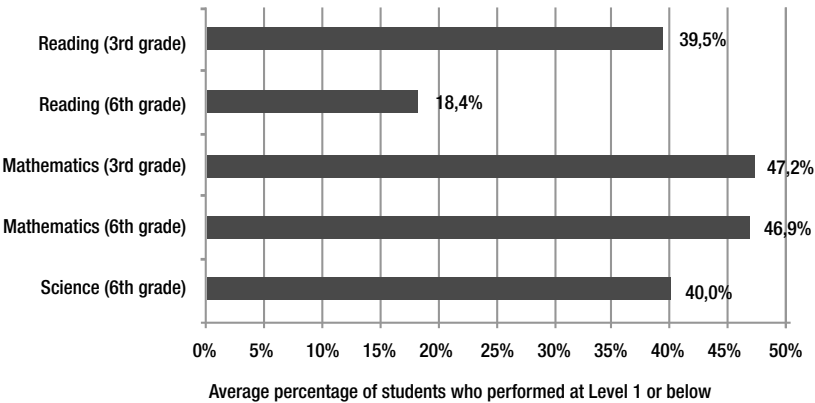
This is an indication that Latin America's education challenges go beyond coverage and early school leaving, and that

they are more closely related to qualitative matters of the educational experience, especially the quality of education. Indeed, the results of national and international tests reveal that Latin American students are not learning at acceptable levels, and that the region is lagging behind the rest of the world.

How do the region’s students perform?

In Latin America, an alarming number of students do not reach a performance level appropriate to their age or grade. This is confirmed by the results of the Third Regional Comparative and Explanatory Study (TERCE) implemented by OREALC-UNESCO Santiago in 2013, in which 15 Latin American countries and the Mexican state of Nuevo León participated. The TERCE results revealed severe weaknesses in reading, math and science among primary school students (see **Figure 1.2**). For instance, two-fifths of third-grade pri-

Figure 1.2.
Poor Performance Levels in TERCE in Latin America, 2013



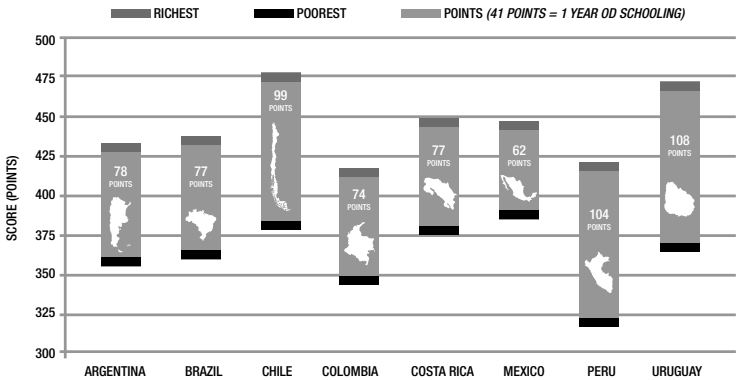
Source: prepared by the authors using data from the First Release of TERCE Results.

mary students (39.5 percent) score low in reading tests and almost half (47.2 percent) in math. In science, some 40 percent of sixth-grade students perform poorly (UNESCO, 2014). In third-grade reading, for example, a poorly performing student cannot locate information with a single meaning unless it is highlighted in the text, repeated verbatim, and isolated from other information, nor recognize simple reformulations of phrases—skills that they should have attained by that age (UNESCO, 2014).

The results of the most recent test of the Programme for International Student Assessment (PISA) in 2012, which assessed 15 year-olds in 65 countries throughout the world, eight of them in Latin America, revealed a similar outlook. Almost half of Latin American students perform poorly in reading (45.8 percent) and science (49.8 percent). In reading, such a low level of performance indicates that a student can neither identify the main idea in a text nor infer information that is not directly located in the text. In math, 63 percent of students performed poorly (Bos, Ganimian and Vegas, 2014a). In other words, they did not attain the minimum level of learning, which PISA defines as level 2 on the test. Students who do not reach level 2 are unable to use “basic formulas, procedures or rules to resolve problems with whole numbers” (Bos et al., 2014a). By contrast, the percentage of students performing poorly in math in the member countries of the Organization for Economic Cooperation and Development (OECD) was just 23 percent (OECD, 2014a). This suggests that a high number of young people, many of whom will enter the labor market in just a few years, not only lack the minimum knowledge to succeed in the classroom and the basic foundations to grasp more complex concepts, but are also deficient in the skills that are essential to performance in a modern job.

This unsatisfactory average performance is accompanied by a high degree of inequality in educational performance in Latin America. An Inter-American Development Bank analysis found that of the Latin American countries that took part in PISA 2012, on average there is an 85-point gap in math between students in the poorest and richest quartile in each country, when a difference of 41 points is equivalent to a year of schooling (see **Figure 1.3**). In other words, the region’s poorest students are the equivalent of more than two years of schooling behind their richer counterparts in math (Bos, Ganimian and Vegas, 2013a).

Figure 1.3.
Score Gap in Math between Students by Socioeconomic Level, PISA 2012



Source: Bos et al. (2013a).

Latin America thus combines two evils: its performance is poor in general, and the performance of children and youths from the most vulnerable households is particularly weak. Indeed, the disparities in educational results in Latin America are appreciably greater than those for most other countries that took part in the test. Of the 16 countries participating in the PISA 2012 tests whose performance in math was below

the OECD average, and whose results varied more widely relative to the average, seven were in Latin America. Mexico was the only participating Latin American country with a high degree of equity in its results above the OECD average (OECD, 2014a).

Argentina serves to illustrate the unevenness of educational performance within Latin American countries. There, the Northeast, Northwest and Cuyo regions performed below the national average in math, reading and science in PISA 2012 (Ganimian, 2014). In math, for example, the average student from Argentina's Northwest region is more than a school year behind his or her counterpart in Buenos Aires. Students in Cuyo, the region with the lowest average reading score in the whole country, performed more poorly than students from Peru, the country with the poorest performance of the 65 countries taking part in PISA 2012. Even within Argentina's own regions there are huge performance gaps between students from different socioeconomic groups. In the city of Buenos Aires, for instance, the score gap between students from the lowest and highest socioeconomic levels amounts to almost four years of schooling in reading and science.

How does Latin America compare to the rest of the world?

International tests reveal that Latin America is lagging behind. In math, for example, the average student in the region is more than two school years behind the average student in the OECD. The difference between the score of the average Latin American student and the average student from Shanghai, China (the leader in the ranking) is equivalent to five years of schooling (Bos, Ganimian and Vegas, 2013b). In fact, in PISA 2012, of the 65 participating countries, all the Latin

American countries were among the 20 with the worst results in math, reading and science. Even Chile, the Latin American country with the best education results, was among those 20.

A similar trend is evident in the most recent results of the Trends in International Mathematics and Science Study (TIMSS) conducted by the International Association for the Evaluation of Educational Achievement (IEA). The TIMSS test, which is held every four years, assesses students from fourth to eighth grade of primary school around the world in math and science. In 2011, students from 63 countries took part, plus 14 other jurisdictions (states in some countries) used as comparison points. In that year, Chile and Honduras were the only Latin American countries taking part in the test. Chile, despite being the leader in the region, scored below the average. Its score in math was very similar to that of Azerbaijan and Thailand, despite the fact that its GDP is almost double that of the other two countries. Honduras was one of three countries—along with Yemen and Botswana—that were allowed to enter sixth-grade students for a test designed for fourth-graders, since it was expected that their fourth-grade students would find it too difficult. Despite this advantage, Honduras scored among the nine lowest places in both tests (Mullis et al., 2011).

In addition to their weaknesses in math, languages and science, Latin American students are also lacking in their understanding of civics and citizenship issues. The International Civic and Citizenship Study (ICCS), which is also administered by the IEA (2011), examines attitudes, behavior and knowledge related to political institutions and concepts such as human rights, press freedom, democratic processes, acceptance of diversity, and other matters. In the 2009 study, the average score in civics knowledge of the six participating

Latin American countries was more than half a standard deviation below the mean of all 38 countries (see **Figure 1.4**). This is a worrying finding, since those students with the lowest level of civics knowledge also evince greater acceptance of authoritarian systems, civil disobedience, and corruption. Overall, Latin American education is not preparing young people to act as citizens.

Figure 1.4.
Country Averages in Civics Knowledge
in the 2009 ICCS Exam



Source: IEA (2011).

Without question, the quality of education in Latin America is compromising the growth of the region’s countries. In 1960, the region seemed to be on the threshold of significant economic growth. It was placed above the Middle East, North Africa and East Asia. Since then, these regions have grown faster and have left Latin America and sub-Saharan Africa in the last places. The number of years of schooling does not explain the lag in economic growth, but the differences in learning levels do (Hanushek and Woessman, 2012).

Improving the quality of education can have a large economic impact over the long term. If the universalization of

secondary education were to be combined with performance improvements, such that every 15 year-old student reached the basic level on the PISA scale (or 420 points), great economic benefits could ensue (OECD, 2015a). On average, the middle/high-income countries could experience 16 percent higher GDP every year for the next 80 years (see **Table 1.1**). The middle/low-income countries—which have lower enrollment rates and poorer performance—would enjoy even bigger gains: a 28 percent increase in GDP each year during the projected period, relative to expected growth at current

Table 1.1.
Effect of Education Results (on % of Future GDP)

	Scenario 1: Every current student attains minimum of 420 PISA points by 2030	Scenario 2: Universal enrollment in secondary school at current quality by 2030	Scenario 3: Universal secondary school enrollment and every student acquires basic skills by 2030
Lower-middle income			
Honduras	24.5%	4.1%	43.1%
Upper-middle income			
Argentina	13.0%	1.0%	14.8%
Brazil	10.0%	3.5%	16.1%
Colombia	10.4%	4.4%	19.5%
Costa Rica	6.6%	2.7%	9.9%
Mexico	6.4%	4.2%	11.8%
Peru	17.7%	2.0%	23.0%
High-income			
Chile	7.0%	1.3%	8.4%
Uruguay	10.4%	2.6%	14.0%
Average	11.8%	2.9%	17.9%

Source: OECD (2015a).

performance levels (OECD, 2015a). Honduras's GDP, for example, would increase by 43 percent a year during the period.

Progress in learning

Despite the poor performance at the regional level, learning levels have improved in some countries in recent years. The comparative results of the SERCE (second regional comparative and explanatory study) and TERCE tests reveal that, on average, the countries assessed experienced an 18-point increase in their performance in the test of third-grade reading. In nine of the 14 countries that took part in both studies, the performance was significantly better in TERCE than in SERCE. Nonetheless, the performance of Argentina, Chile, Colombia and Uruguay did not vary, while the reading scores for Costa Rica, Mexico and the Mexican state of Nuevo León declined in the third study (UNESCO, 2014). In the test of third-grade math, the region moved up 31 points on average, but in this subject too there were similar variations between countries.

Analyses of the PISA 2012 results yield a less optimistic appraisal of educational trends in the region. A report by the Inter-American Development Bank, for example, points out that since the 2003 PISA test, the eight participating Latin American countries have made disparate progress, and thus it cannot be argued conclusively that the region has improved. The test results have been similar in math since 2003, in reading since 2000, and in science since 2006. In this light, five of the eight countries saw no significant difference in their results in math. Three countries saw no change in reading, while seven of the eight saw no significant change in science. In all subjects, three countries stand out for their scant progress over the years: Argentina and Costa Rica experienced

no significant change in any of the three subjects during this period, while Uruguay's performance worsened in all three (Bos, Ganimian and Vegas, 2014b).

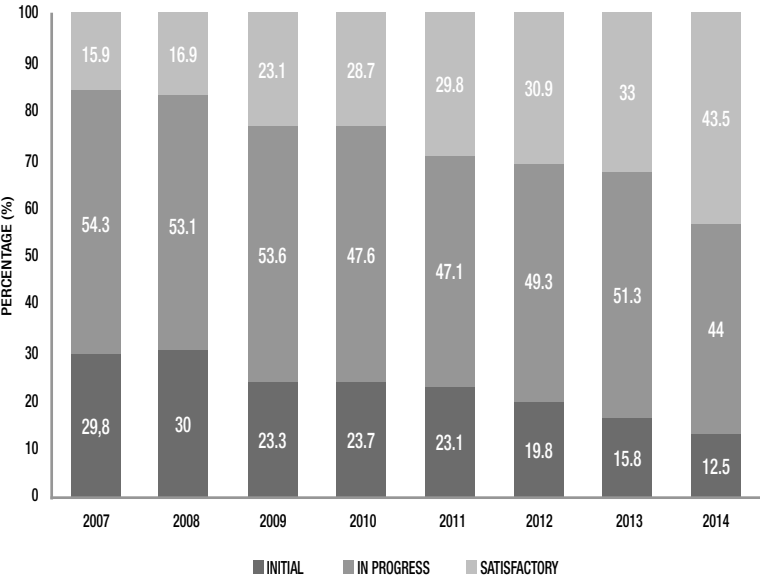
The same study points out that, despite improvements in some countries of the region, the pace of progress is insufficient to move Latin America out of the lowest-performing third in PISA. Only a few countries are approaching the average performance of the OECD, or 500 points in the test. But even the countries that are closest to this average and are moving fastest will take decades to reach the OECD average. Brazil, for example, will take 27 years to reach the OECD average in math, and Chile will take 18 years to reach the average in reading. By contrast, other countries outside the region have moved faster and will reach the OECD average in less than a decade.

Mexico is one of the countries that illustrates the region's stagnation in educational quality. An analysis conducted by Mexicanos Primero (2013a) revealed that between 2000 and 2012, Mexican students' performance in the PISA reading test improved by only two points, while it declined by seven in science. More appreciable progress is evident only in math (a total of 26 points), but this is equivalent to just two-thirds of a year of schooling. Between 2009 and 2012, moreover, Mexico's performance declined in all subjects. At this pace, Mexico will take 64 years to reach the level of the best country in math.

It is worth noting, however, that some countries in the region made surprising progress on education. These include Peru, whose 57-point increase in reading between 2000 and 2012 is equivalent to almost a year and a half of schooling; Peru improved more than any other Latin American country

(Bos, Ganimian and Vegas, 2014c). Such progress is also confirmed by the results of the 2014 Census-Based Student Assessment, a test conducted annually by Peru’s ministry of education since 2006. The results from 2007 to 2014 reveal a positive trend in learning levels. In reading, for example, the percentage of second-grade students with a satisfactory level of attainment has increased each year (see **Figure 1.5**).

Figure 1.5.
Reading Comprehension among Second-Grade Students in Peru (2007-2009)



Source: results of the Census-Based Student Assessment (ECE) 2014. Educational Quality Measuring Unit, Ministry of Education of Peru.

In math, the percentage of second-grade students with a satisfactory achievement has also grown, from just 7.2 percent in 2007 to 25.9 percent in 2014 (MINEDU, 2014). While it is true that these performance levels are still low, and that Peru remains in last place worldwide in PISA 2012, the

country's progress attests to the significant improvements that can be made in student learning over relatively short periods.

In fact, there are indications that reforms focusing on improving the quality of teaching have a positive impact on educational outcomes in some countries. Bos, Vegas and Ganimian (2014d) discuss the case of Brazil, which despite its high levels of inequality is one of the countries that have improved most, and fastest, since 2006. In math, for example, Brazil has the fifth highest rate of increase among the 65 countries participating in PISA. Brazil has implemented educational reforms, many of which are positively correlated with improvements in math scores. Specifically, greater monitoring of teachers, better use of test results, as well as a reduction in the number of unqualified teachers, are related to improvements in math (Bos et al., 2014d).

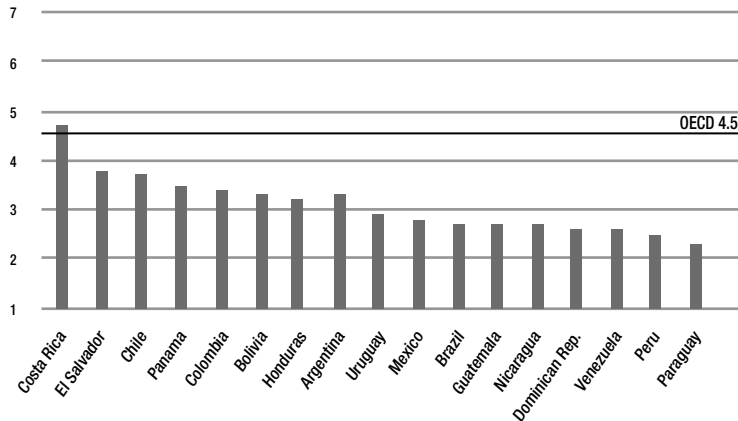
The skills gap in Latin America

Latin America's education systems are not preparing the human capital that the countries' economies need to grow and boost productivity. Employers in the region face mounting problems in filling jobs with qualified staff. According to a ManpowerGroup study, 42 percent of employers had difficulty to fill vacancies in Latin America in 2015, compared to 34 percent in 2010. The main reason for this paucity of talent is a lack of basic, technical, and socioemotional skills among candidates (Sucre, 2014). A systematic World Bank review of competencies and skills found that the priorities for Latin American employers are, first, higher-order cognitive skills, followed by socioemotional skills (Cunningham and Villaseñor, 2016).

As explained earlier, the results of national and international performance tests yield evidence of a lack of basic skills

in the countries of the region. A recent World Economic Forum analysis, which captures private-sector employers' perceptions of the quality of their employees' education, found that, on average, Latin American countries perform far below those of the OECD. On a scale of 1 (worst) to 7 (best), almost all the countries of Latin America scored below 4.5, which is the OECD average (see **Figure 1.6**).

Figure 1.6.
Quality of Education in Latin America: Total Score
(points)

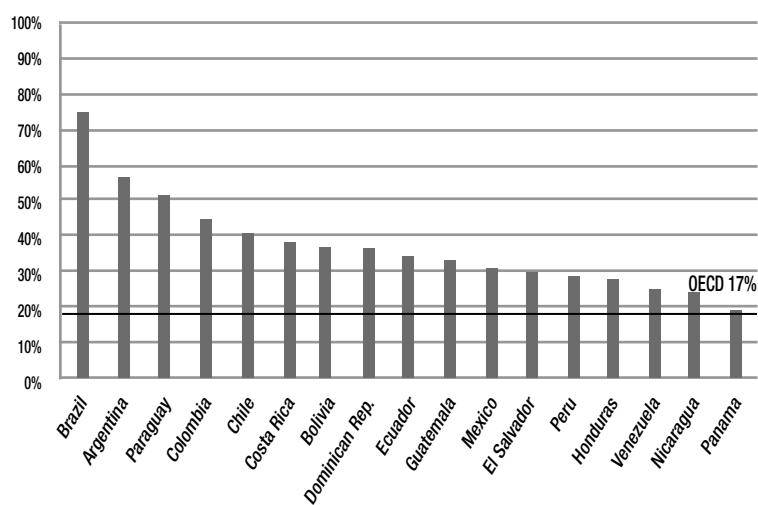


Source: World Economic Forum (WEF) 2014 and WEF *Global Competitiveness Report* 2014–2015. The quality of education is based on the perception of 3,675 business executives in 17 Latin American countries, with responses on a scale of 1 to 7 (where 1 is low and 7 is high).

Employers also claim to encounter a lack of the technical skills that are normally acquired in special programs at the secondary level (technical and vocational education) and the post-secondary level (universities, non-university higher education). A 2010 World Bank survey of businesses reveals that the proportion of Latin American firms reporting that they have an inadequately prepared work force is almost

double the share in the OECD (37 percent vs. 21 percent). Asked if the lack of qualified staff is a significant constraint, the percentage of firms that answered yes in all countries of the region was higher than the OECD average (see **Figure 1.7**).

Figure 1.7.
**Businesses that Identify Lack of Qualified Staff
as a Significant Constraint, 2010**



Source: World Bank Enterprise Surveys, 2010.

Socioemotional skills refer to a wide range of aptitudes, including interpersonal relations, dispute settlement, negotiation, communication and team work, among others (Ortega Goodspeed, 2016). These skills are considered as important as basic and technical skills, and in some cases even more so. A 2011 Demand for Skills (DSS) study of 1,176 private businesses in Argentina, Chile and Brazil shows that the score assigned to socioemotional skills is almost double that granted to cognitive skills and up to four times that accorded to technical skills.

While cognitive skills are promoted directly in Latin American countries, socioemotional skills are not developed systematically. Hence future employees arrive in the labor market with incomplete or uneven skills. Several surveys report that employers cannot fill their vacancies in large part because of a lack of socioemotional skills. In Mexico, for example, the results of a survey of 1,556 employers indicate that they would be willing to pay more for an employee with skills such as decision-making ability, negotiating capacity, dispute settlement, assuming responsibility, innovation to improve products, ability to relate to customers, and punctuality (Encuesta de Competencias Profesionales, 2014). Adapting study and training programs to support the building of these skills is a new challenge for the region's education systems.

Final remarks

Latin America has made significant progress as regards the coverage of and access to education, and has succeeded in expanding the inclusion of children from the most marginalized sectors in schools. Nonetheless, students are simply not learning at acceptable levels and education is not properly preparing young people to join the labor market. Without substantial improvements in learning levels and skills building, it will be hard to translate the increasing enrollment rates into the improvements in life quality to which Latin America's citizens aspire; they are very likely to be another source of frustration rather than of economic and social progress.

II. Early Childhood Development

It might seem paradoxical, but some of the investments that have proven most effective in improving learning are made before the start of primary schooling. In the words of the Nobel laureate James Heckman (2008), the rates of return on early investments are higher than those on investments in human capital at other stages of life.

The scientific evidence is very clear: the basic skills that determine the capacity to learn are developed early in life. The development gaps that open up before the start of schooling amass deficits that are very hard to eradicate.¹

Children from low-income households are especially vulnerable in this regard: to a large extent, the bases of social inequality are established in the early years of life. Recent studies (Schady et al., 2015) in several Latin American countries (Chile, Colombia, Ecuador, Nicaragua, Peru) have found language development gaps between young children from rich and poor households that range between 0.6 and 1.2 standard deviations. Similarly, Verdisco et al. (2015) have found substantive differences in both language development and cognitive development between children (two to six years old) from the richest and poorest quintiles in Costa Rica, Nicaragua, Paraguay and Peru.

The evidence, moreover, shows that these gaps widen substantially over time (Rubio-Codina et al., 2015; Schady, 2011; Verdisco et al., 2015), which suggests they have a cumulative effect that is very harmful to children's development. Indeed, while the child health and nutrition indicators reveal an increasingly positive outlook in the region, there is growing

Table 2.1.
Enforceability by Prevailing Education Laws in the Region

Countries	Enforceability	Law	Year
Argentina	5 years	National Education Law	2006
Bolivia	Not obligatory	Education Reform Law	1995
Brazil	4 years	Law on the Guidelines and Bases of Education, Constitutional Amendment 59, Art. 208	1996, revised in 1997, 2001 and 2003. Enacted in 2004
Chile	Not obligatory	Education Law, constitutional reform (law 20.719)	2013
Colombia	5 years	General Education Law	1994
Costa Rica	5 years	Basic Law on Education	1957, revised in 1958, 1992, 1996 and 2001
El Salvador	4 to 6 years	General Education Law	1996, revised in 2000, 2003 and 2005
Ecuador	5 years	Organic Law on Intercultural Education	2011
Guatemala	5 years	National Education Law	1991, revised in 2006
Honduras	Not obligatory	Organic Law on Education	1966
Mexico	3, 4 and 5 years	General Education Law	1993, revised in 2000, 2003, 2004, 2005 and 2006
Nicaragua	Not specified	General Education Law	2006
Panama	4 and 5 years	Organic Law on Education	1946, revised in 1995
Paraguay	5 years	General Education Law	1998
Peru	Gradual implementation from 3 to 5	General Education Law	2003
Dominican Republic	5 years	General Education Law	1997
Uruguay	4 and 5 years	Law on Education and Culture	2008
Venezuela	5 years (daycare center)	Organic Law on Education	2009

Source: Itzcovich (2013), updated for Chile, Costa Rica and Guatemala.

evidence that the gaps in other dimensions of child development—especially in terms of cognitive and language development—are wide, comprising a significant bottleneck in children’s ability (particularly children from socioeconomically vulnerable households) to learn once they enter school (Berlinski and Schady, 2015).

This evidence makes plain the critical importance of a strategy for early investment in children up to the age of five. The idea is to lay the groundwork for learning even before children start primary school, so as to underpin improvements in the performance of the Latin American school system—the core issue of this report.

Preprimary education

Much of the attention paid to child development in Latin America has centered on the expansion of coverage in preprimary education (preschool), which—depending on the country—covers children between the ages of three and five. In many countries it is mandatory for children to attend preschool, albeit with variations in their ages (see **Table 2.1**). Indeed, in the past decade there has been a marked increase in the percentage of children enrolled in early education. As Chapter I of this report pointed out, the increase in coverage in Latin America compares very positively with the rest of the world.

Table 2.2 shows the significant increase in the rate of attendance among five year-olds. In most Latin American countries, attendance has risen by 20–30 percentage points since the beginning of the century. It is worth mentioning that the growth in coverage has been related to an appreciable narrowing of the socioeconomic gap. For example,

Table 2.2.
Attendance Rates in Preprimary Education

Country	Year	Children up to 5 (%)			
		Total	Q1	Q5	Difference Q1–Q5
Argentina	2000	72.1	64.9	81	–16.2
Argentina	2013	92.7	89.5	94.7	–5.3
Bolivia	2000	46.4	41.2	70.9	–29.7
Bolivia	2013	72.5	56.5	87.1	–30.5
Brazil	2000	65.7	56	90.7	–34.7
Brazil	2013	87.2	83.2	96.4	–13.2
Chile	2000	63.3	55.4	84.7	–29.2
Chile	2013	95.1	92.7	97.8	–5.2
Colombia	2000	70.7	58.2	91.1	–32.9
Colombia	2013	90.3	84.8	98.3	–13.5
Costa Rica	2000	41.6	30.1	65.9	–35.8
Costa Rica	2013	75	67.1	94.6	–27.5
Ecuador	2000	70	61.4	82.4	–21
Ecuador	2013	93.7	89.3	97.8	–8.5
El Salvador	2000	47.2	30.4	82.3	–51.9
El Salvador	2013	68.6	56.7	91.6	–34.8
Honduras	2000	35.6	23.4	65.7	–42.4
Honduras	2013	82.2	72.5	98.8	–26.3
Mexico	2000	82.9	70.1	91.3	–21.2
Mexico	2013	97.3	94.5	98.2	–3.7
Panama	2000	65.8	48.6	93.7	–45
Panama	2013	90.3	82.5	96.8	–14.3
Paraguay	2000	54.1	47.1	70.3	–23.2
Paraguay	2013	73.6	64.2	93.8	–29.6
Peru	2000	71.5	57.3	93.8	–36.5
Peru	2013	91.6	86.2	98.2	–11.9
Dominican Republic	2000	66.4	50.3	83.3	–33
Dominican Republic	2013	81.5	79.1	86.5	–7.4
Uruguay	2000	90.8	84.3	100	–15.7
Uruguay	2013	98.8	98.2	99.1	–1.0

Note: for Brazil, Costa Rica, Honduras, Nicaragua and Paraguay, data for 2001. For Mexico and Nicaragua, data for 2012. Information for Uruguay refers to urban areas.

Source: Inter-American Development Bank database of harmonized household surveys.

between 2000 and 2013 the attendance disparity between five year-olds from the first and fifth quintiles on the income distribution fell from 29 percent to 5 percent in Chile, from 33 percent to 7 percent in the Dominican Republic, and from 45 percent to 15 percent in Panama (Berlinski and Schady, 2015).

It is not surprising that the enrollment rates are lower for children below the age of five, especially among the lowest-income socioeconomic sectors and in rural areas. This seems to be related to constraints on both the supply of and demand for services. Social factors could be affecting the lack of enrollment: the “legitimacy” of preschool is not always well established, particularly for children of an age for which such education is not mandatory (Itzcovich, 2013).

The international evidence shows clearly that early education plays an important role in enabling children to develop properly and to enter primary school ready to learn (Alderman and Vegas, 2011). The experiences of expanding preschool education in Uruguay (Berlinski, Galiani and Manacorda, 2008) and Argentina (Berlinski, Galiani and Gertler, 2009) show clear effects on children’s later learning and enrollment.

Acknowledging the effort made and the importance of a more extensive infrastructure for preschool education services, it must be conceded that, on its own, its mass expansion will not yield the desired results in terms of child development, nor have a significant effect on learning capacities in primary schools. This is because of the poor quality of many preschool programs, and because of the shortcomings of efforts to foster the development and stimulation of non-enrolled children, a matter that we will address later in this chapter.

There is only very limited information available on levels of learning acquired in preschool education. In Mexico, for example, the EXCALE test in the 2010–2011 school year found that about 50 percent of children in the third year of preschool were performing at the basic level or below in mathematical thinking as well as in language and communication. In community preschools, some 20 percent of children were below the basic level (Mexicanos Primero, 2014). As with the indicators of performance in the early primary grades described in Chapter I, results like this suggest that there are grave deficiencies.

Berlinski and Schady (2015) have presented an exhaustive summary of measures of the quality of preschool educational processes in Latin America, including matters such as the quality of teacher-student interactions, emotional support, classroom organization, teaching support and the use of classroom time. Though they are available for only a few countries of the region (Brazil, Chile and Ecuador), these studies uncover weaknesses, especially as regards the educational support that children receive. In Ecuador, research was able to show conclusively that the quality of teacher-learner interactions has a marked impact on a wide array of child learning measures.² As with renowned studies in the United States (Chetty et al., 2011), these findings underscore that the quality of the teacher (measured in particular in terms of what they do in the classroom and not of their personal attributes) is a fundamental factor—perhaps the most important—in the variations in children’s performance.

The main implication of these studies is that, as in other levels of education, excellence in teaching (the subject of the next chapter) is the closest thing to a “silver bullet” in improving learning levels. At the same time, these findings sound a

warning that the mass expansion of early education without focusing closely on quality or paying special attention to the processes needed to control that quality (including its assessment) could have unsatisfactory outcomes and spur much frustration, because the huge efforts made will not yield the desired fruit.

Child care programs

A growing number of Latin American children, especially those not yet of an age to attend preschool, go to child care centers (nursery schools, day care homes, kindergartens, crèches and so on) both formal (often connected to schools) and community (Araujo and López Boo, 2015). **Table 2.3** illustrates this trend for seven countries of the region. The growth has been particularly high in publicly run centers (which receive state financing) that now comprise the bulk of the coverage of these services in countries such as Chile, Colombia and Ecuador (Berlinski and Schady, 2015).

Table 2.3
Enrollment in Institutional Child Care Centers (%)

Country	2000			2010		
	National	Rural	Urban	National	Rural	Urban
Brazil	11.7	4.5	13.3	21.2	9.4	23.5
Chile	11.4	3.4	12.6	26.1	15.7	27.5
Colombia	n.a.	n.a.	n.a.	n.a.	13.5	34.0
Ecuador	3.7	2.8	4.3	23.2	23.1	23.3
Guatemala	1	0.5	2.1	1.2	0.5	2.2
Nicaragua	8	6.5	9.3	7.6	7.4	7.7
Uruguay	21.7	5.4	22.9	35.1	20.7	37.7

Source: calculations by Berlinski and Schady (2015), p. 96; n.a. = not available.

This expansion has facilitated the gradual inclusion of women in the labor market.³ But what impact has it had on child development, especially as regards those matters that will have a marked influence on their learning capacities and school success?

The available evidence shows that typically these programs in Latin America have been deficient as regards their impact on children's development. Berlinski and Schady's (2015) careful review of studies offers a dispiriting outlook that the authors characterize as "a not too pleasant picture." Studies conducted in Ecuador, for example, show that the centers' quality is deficient or poor, both in terms of structural factors (such as infrastructure, furniture and others) and of processes (emotional and educational support, for instance). Analyses in Bolivia, Brazil and Peru, moreover, yield similar findings.

The reality is that providing quality care services for young children in an institutional context is expensive,⁴ and requires capacities (such as staff training and supervision) that typically are in short supply. This suggests that the use of public financial and institutional resources for child care purposes must prioritize the goal of serving those experiencing vulnerability in their households, which have neither the means nor the opportunity to stimulate them, and support their development in the context of the family and community. For these children, even though the cost is high, attendance at high-quality centers could be a beneficial alternative, as well as an efficient and effective use of public resources.

At the same time, there is mounting evidence of the impact of home visits programs and parental support schemes. Typically these programs center on fostering early cognitive stimulation (in children up to the age of three) by means of

very specific curricula and regular monitoring by qualified home visitors. Given the low levels of stimulation evident in most of the countries, especially in households where the mothers have low levels of education,⁵ these programs can improve children's cognitive capacities at relatively low cost. Some impact assessments (in Jamaica, Colombia, Brazil, Ecuador) show very significant effects on the cognitive skills of these children, especially when the supervision and monitoring are intensive (Berlinski and Schady, 2015).

These tend, however, to be pilot or low-coverage projects. Hence the challenge is how to upscale them (covering all children affected by vulnerability) and above all taking account of the need for a strong curriculum and a robust monitoring and oversight strategy. The training and supervision of human resources is likely to be the main bottleneck to be tackled. In many cases this involves efforts to strengthen development/social assistance ministries and agencies. At the same time, however, the educational authorities (which normally have a greater territorial presence) can also play an important role in these efforts.

A child development strategy

Early investment is a key and essential aspect of any effort to improve educational outcomes in Latin America. Broadening the coverage of preprimary education is clearly an important aspect of these efforts, but it must be done in a context of high quality. Excellence in teaching and learning assessments (issues addressed in the following chapters) are essential aspects of this context of high quality.

At the same time, early investment must be framed in a more comprehensive strategy of child development (see

Box 2.1.
A Regional Agenda for Comprehensive Early Childhood Development

The Todos pela Educação movement, the Fundação Maria Cecília Souto Vidigal and the Inter-American Dialogue (with the support of the Bernard van Leer Foundation and the REDUCA network of civil society organizations) brought together various stakeholders in a workshop in São Paulo, Brazil, on September 14–16, 2015. The aim of the workshop was to define a **Regional Agenda for Comprehensive Early Childhood Development** (CECD) that serves as an advocacy tool in the countries of the region.

The regional agenda proposes that each country should define, in a participatory way, a set of targets and indicators for CECD, adopting a rights-based approach and a holistic view (issue 1). To that end, there is a need to strengthen governments by institutionalizing a coordinating mechanism (with budgetary authority) at the central level (issue 2) and reinforce the quality service management mechanisms at the local and family levels (issue 3). This model is underpinned by two factors: the building of a sociopolitical coalition (issue 4) and knowledge management (issue 5). As regards the former, this is a joint effort by regional, national and local actors, both governmental and from civil society. The latter enables the production of evidence to support interventions.

ISSUE 1: creating participatory processes to define comprehensive early childhood development targets and indicators with a rights-based approach.

ISSUE 2: creating/strengthening institutional mechanisms with budgetary authority and the power to forge intersectoral and interjurisdictional linkages.

ISSUE 3: strengthening the management of comprehensive attention to quality for early childhood services and childrearing in the family.

ISSUE 4: creating and consolidating a sociopolitical coalition to advocate for the priority of comprehensive development in early childhood at the level of public policies and civic commitment.

ISSUE 5: strengthening the management of knowledge of comprehensive early childhood development in the region.

Box 2.1), one that ensures that appropriate investments and interventions are implemented effectively, even though the traditional education sector does not assume the leadership in them.

A strategy that prioritizes early investment must therefore respond to three main challenges: (i) identify which programs should be expanded (and on whose behalf) on the basis of cost-effectiveness that takes account of the quality of services; (ii) define the institutional makeup of a sector that does not fit easily into the traditional school system; and (iii) determine the financing required to guarantee proper implementation of the investments, including crucial factors such as appropriate staff training and supervision.

As regards the first of these challenges, the international evidence delivers quite clear messages. The mass opening of child care centers will not be the answer. The very necessary expansion of care, development and early education services must be carried out in line with efficiency criteria that take account of the cost-benefit ratio—where the benefits are directly related to the quality of the services. The same can be said of preschool education where, for example, better quality could prepare the ground for an early improvement in reading skills.

The most reasonable strategy is to concentrate resources, on the one hand, on well-structured programs of home visits and support to low-income parents; and, on the other, the expansion of preschool (especially in areas with high poverty levels) with particular attention to the quality of teachers (Walker, 2011; Alderman and Vegas, 2011). This point is well illustrated in **Table 2.4**, which summarizes the findings of Berlinski and Schady's (2015) careful analysis of the costs and benefits

of three types of programs in three countries of the region.⁶ In all cases the returns on interventions geared to the household are much higher than those geared to kindergartens, and the returns on preschool are even higher. From the standpoint of child development—and its contribution to the goal of improving educational outcomes—the priority seems to be clearly set:⁷ to invest in programs geared to the household and to the growth of high-quality preschool services.

Table 2.4.
**Cost-Benefit Rates for Home Visits, Kindergartens
and Preschool**

Country	Home visits	Kindergartens	Preschool
Chile	3.5	1.5	4.3
Colombia	2.6	1.1	3.4
Guatemala	3.6	1.2	5.1

Source: Berlinski and Schady (2015), p. 175.

The challenge of expanding high-quality services is especially difficult because most countries lack an established authority that is in charge of the matter, and thus responsibilities are hazy. The ministries of education are responsible for preschool education, but not for the other programs. Typically there is a fragmentation of efforts, with a prevalence of small initiatives that are not framed properly within a system that fosters and guarantees quality and results.

There seem to be three groups of countries that can be classified according to how complete their progress has been in recent years (Aulicino and Díaz Langou, 2015). A first group (Chile, Colombia, Cuba and Ecuador) moved forward in establishing comprehensive childhood strategies—multi-sectoral approaches that focused not just on the child but on

the family. A second group (Costa Rica, Brazil, Nicaragua, Panama, the Dominican Republic and Uruguay) made significant regulatory or discursive progress towards establishing wide-ranging strategies for early childhood, but they did not prove to be comprehensive in implementation. Finally, a third group (Argentina, Guatemala, Paraguay, Peru and Mexico) channeled the progress on early childhood policies through programs, with no attempt to devise a comprehensive approach.

The problem of institutional fragmentation demands some kind of coordinating or steering body that focuses closely on controlling the quality of services and has the budgetary authority to ensure that efforts are sustained. Determining targets and indicators of childhood development with enough social and political consensus is crucial in guiding such efforts (see **Box 2.1**).

The expansion of early childhood services and programs—even when priority attention is given to the households of greatest need—will doubtless require additional fiscal resources. For example, ECLAC and the Organization of Ibero-American States (OEI) have estimated the incremental costs of expanding the coverage of childhood development programs as part of the 2021 Targets.⁸ The two organizations found that the expansion of programs for children from zero to three years—to meet the target of 37 percent coverage—would require additional spending of US\$9 billion, and that the universalization of preschool would call for US\$14 billion a year.

The fact is that, despite the fiscal efforts made, public spending on early infancy is significantly lower than in later stages of childhood. Berlinski and Schady (2015) present

estimates indicating that spending on children from zero to five years accounts on average for 0.4 percent of GDP, while spending on those aged between six and twelve accounts for 1.6 percent of GDP. Despite all the limitations of these figures,⁹ it is undeniable that an essential aspect of any effort to use early investment as an instrument to improve educational quality and learning will demand that higher priority be accorded to spending on early childhood, with particular attention to the poorest children.

Given the substantial fiscal constraints facing the countries of the region, decisions on budgetary allocations will demand close attention to the costs and benefits of different alternatives. For example, Berlinski and Schady (2015) estimate that the cost of extending the coverage of home visits for children from one to two years old and expanding preschool programs for those from three to five, with better quality processes, would require seven times less money than the alternative of also expanding kindergartens, with greater stress on improving matters such as infrastructure.¹⁰ We will return to these points in Chapter VII, when we discuss matters related to the financing of educational quality.

Final remarks

To meet the goal of childhood development and thus help close the learning gaps in schools, priority must be given to managing high-quality child development programs, as regards both early education and also assistance, care and stimulation programs for children. Moving forward more resolutely in this area demands intersectoral coordination, activities geared not just to children but also to families, and financial and human resources.

III. Teaching Excellence

There are few issues in the field of education policy that prompt so much consensus but also so much controversy as teaching policies. Nobody disputes the importance of teacher excellence for learning attainments. In fact, the position that it is necessary to improve teacher performance as a prime aspect of educational change is a consensus view across the spectrum of opinion on education policy. The controversy arises when the discussion turns to how to do it. This is when tensions surface, often in unproductive debates.

The importance of the teaching issue has spurred a growing number of studies in Latin America that reveal the wide quality gaps in the profession. A World Bank study (Bruns and Luque, 2014) shows that, currently, no teaching force in the region can be regarded as high quality, and that performance is compromised by a poor handling of academic content and ineffective classroom practice. For example, on average teachers use only 65 percent of class time on instruction, and they use very traditional methods that entail little student participation. A study of Colombia by the Fundación Compartir (García, Maldonado, Perry, Rodríguez and Saavedra, 2014) shows that graduates of teacher training institutes attain results significantly below those of other graduates in official performance tests. And the regional report by OREALC/UNESCO (2013) points out that there is a remedial view of continuous training among Latin American countries.

A series of recent studies on education systems in El Salvador, Guatemala, Honduras and the Dominican Republic (Inter-American Dialogue, 2015) identified many promising initiatives in issues such as setting teacher performance stan-

dards or holding competitions for entry into the profession. Such progress, however, is patchy: in some policy areas there has been very little progress, while substantial difficulties persist in implementing rules that often are not fully applied in practice.

The main matters to be considered when devising policies and practices that are conducive to excellence in teaching are well known: preservice training (including mechanisms to attract those who decide to study to be teachers), professional development (including mechanisms for recruiting, promoting, recognizing and rewarding teachers and principals), support systems for teachers (involving continuous training), and management (including assessment for continuous improvement).

Preservice training

The people who study to be teachers and how they are trained are fundamental pillars of a high-quality education system. Latin America still has much to do as regards attracting good students into educational careers and improving their training.

Better students, better teachers

In Latin America, the students who embark on teaching careers are generally not the best trained. In countries for which data is available, such as Chile, Colombia and Brazil, the average scores of those who studied for educational careers is below those of students who opted for other, more prestigious professions (Bruns and Luque, 2014). By way of reference, countries that score well on international tests, such as Finland and Singapore, only accept candidates from

among the top 20 percent and 30 percent of secondary school graduates, respectively, and only a small proportion of graduates—who already are from among the best performing students—are accepted onto the programs: 10 percent in Finland and 12.5 percent in Singapore (Auguste, Kihn and Miller, 2010).

This partly reflects the fact that a teaching career in Latin America is less attractive than other degreed professions, especially in terms of salary. Recent studies (Bruns and Luque, 2014; Mizala and Nopo, 2012) show that teachers' average salaries are lower than those of other professional, technical, and administrative workers. Even controlling for the length of the working day, teachers' salaries are still lower in four countries (Brazil, Nicaragua, Panama and Peru), and at the same level as other professionals in three (Chile, Costa Rica and Uruguay). Another finding in this respect is that teachers' salaries are much flatter over time—that is, they rise only slightly in comparison to the pay increases of other professionals.

At the same time, admission procedures to study to be a teacher in Latin America are not selective. The region's most exacting teacher training institutions select candidates for their programs using a combination of examinations and interviews, such as happens in the Universidad de Costa Rica, Peru's Pontificia Universidad Católica and Mexico's Universidad Pedagógica Nacional (Bruns and Luque, 2014). Most of the region's teachers, however, are not trained in such institutions.

Commendable efforts are being made to reverse these trends. Some Latin American countries have taken steps to establish more stringent requirements for admission to preservice training (see **Box 3.1**). Ecuador has set a mini-

minimum score for entry into education careers in the National Examination for Higher Education. Mexico examines candidates on basic knowledge. In Chile, the new plan for the teaching profession considers demanding a minimum score to apply for teaching careers in the entrance exam for university, or requiring that candidates be among the 30 percent best performing students. Peru sets a single national exam for admission to non-university institutions in higher education.

Box 3.1.

Preservice Training Requirements for Early Childhood Teachers

There is a wide range of preservice training requirements for early childhood teachers, varying by country and institution, and they tend to be academically weak. Some countries have established national requirements (Argentina, Cuba, Nicaragua, Panama and Venezuela), while in others the requirements are determined by the training institution (Brazil, Chile, Colombia, Mexico, Peru and the Dominican Republic). In Argentina, for example, there are three requirements: completion of secondary education, attendance at a preservice course (the requirement is to attend, not pass) and in some jurisdictions a psychophysical exam. In Colombia candidates are required to demonstrate academic performance in a standardized test. In general, public institutions set entrance exams and private bodies hold group interviews. In Chile, the only requirement is finishing secondary school. Only 10 percent of institutions demand minimum scores in the university entrance exam for teaching careers. The modest requirements for those admitted to the training, and the diversity of the curricula because of a lack of national guidelines (except for Cuba and Argentina), pose significant challenges in ensuring quality in the training of future early childhood teachers.

Source: Pardo, Adlerstein and CEPPE-UNESCO (2015).

Teachers with attitudes such as sociability and openness to new experiences are more effective in fostering socioemotional skills in their students (Rockoff, Jacob, Kane, and Staiger, 2011), and teachers who display to their students positive attitudes towards learning secure better test results and induce greater motivation (Brunello and Schlotter, 2011). This highlights the possible benefits of including these skills into selection procedures and in teacher training. As the international experience of Teach for All demonstrated, the use of personal characteristics in selection processes is possible by means of an assessment of such characteristics based on evidence, or on applicants' personal experiences, or on their behavior in personal interviews or group activities (Cumsille and Fiszbein, 2015).

While the more stringent admission requirements will help attract better candidates, those efforts alone are not enough. It is plausible that reversing the historical pattern of those who hope to become teachers will demand proactive efforts to attract good students and not simply the imposition of barriers to entry. For example, Chile and Peru have given impetus to teaching vocation scholarships, the *Beca Vocación de Profesor*¹¹ and the *Beca Vocación de Maestro*,¹² respectively, to attract and retain students with good academic records in preservice teacher training programs, making the service conditions more appealing. Both programs cover the registration costs and course fees, as well as other benefits such as a tuition allowance, medical insurance, mentoring and support during the process of acquiring the qualification in Peru, and a monthly allowance plus a semester abroad for the best candidates in Chile. In the latter, the program also grants financing to outstanding students who complete degrees in other subjects and decide to embark on a teacher training program.

At the same time, it will be difficult to make the teaching profession more attractive if salaries do not reflect the greater prestige sought. In recent times various countries have increased teachers' salaries,¹³ but even more has to be done to attract good candidates to the profession.

More rigorous and practical preservice training

One of the chief criticisms of preservice teacher training in the region is the lack of rigor in mastery of academic content and teaching methods, and problems of aligning learning standards with the goals of the education system (OREALC/UNESCO, 2013). The results of the tests applied to teachers suggest that there are serious shortcomings in their training. In the Dominican Republic, studies carried out in 2013 revealed that teachers in first to fourth grade of primary education were proficient in only 60 percent of the content of the math curriculum, and that 85 percent of them were in the lowest level of proficiency in the concepts needed to teach child literacy. In other words, the teachers had serious shortfalls in knowledge and in knowing how to teach. In Guatemala, the teachers who took the tests to qualify for teaching posts in 2014 showed proficiency in only half of the questions on language and teaching strategies, and a third of the questions on math (Inter-American Dialogue, 2015). In 2012, in Ecuador, only 2 percent of public-school English teachers passed the TOEFL iBT test with the score needed to teach—that is, equivalent to or higher than the B2 level of the Common European Framework of Reference for Languages (Consejo de Europa, 2002).

Another failing of preservice training in the region is the disconnection between training and practical experience, especially in the early stages of a career (Bruns and Luque,

2014; OREALC/UNESCO, 2013, 2014c; Vaillant, 2013a). Of the countries for which information is available, Cuba has high levels of practical training before people start their teaching careers: about 140 obligatory weeks of practice, which is 72 percent of the training period. Cuba, however, is the exception. According to Bruns and Luque (2014), the country with the second longest period of teaching practice is Mexico, where 25 percent of preservice training (40 weeks) is practical experience. Argentina, Brazil and Peru have about 35, 10 and two weeks, respectively. At the extreme, given the autonomy of educational institutions, there are some teacher training programs in the Dominican Republic that require no practical experience whatsoever to receive a teaching qualification (Inter-American Dialogue, 2015). Moreover, in the countries where there is practical training, the model is based on imitating the practices of another teacher, with no channels for discussion and no links between experience and training in educational theory (OREALC/UNESCO, 2014c).

These practices are very different from those in countries that are renowned in the field of education, such as Finland and Singapore, where preservice training concentrates on matters of discipline and pedagogical knowledge of academic content, and where preservice training curricula are based first and foremost on evidence and technical research, as in Australia (OREALC/UNESCO, 2014c). Practical experience, moreover, is crucial during preservice training in those countries. In Finland, a third of preservice teacher training is related to practical work, and the universities have close links to the schools. Teachers in training practice in seminars or peer groups at university, or in schools that have a strong support network of teachers and supervisors with a great deal of professional experience (OREALC/UNESCO, 2014c). It is important to understand that un-

guided or unsupported practice is not enough to improve training quality; the practice has to be steered by teachers with more experience.

The fact is that there has been scant quality control of teacher training programs. Given the low costs of the infrastructure needed to impart courses in education compared to other disciplines, and the level of university autonomy in the region, a large number of higher education institutions of varying quality have emerged to offer these programs. The region's governments have mainly used accreditation or the establishment of curricular guidelines as the means of ensuring quality. These approaches do not always have the desired results. In Chile, for example, the system that requires education programs to be accredited does not prevent them from operating if they do not acquire the accreditation (Bruns and Luque, 2014; OREALC/UNESCO, 2013). Argentina and Brazil have national curricular guidelines for preservice training but they are very general and allow for various interpretations (OREALC/UNESCO, 2014c). Some countries have opted to draw up regulations on entering or leaving the profession, or both, but these do not resolve the problems arising in preservice training (OREALC/UNESCO, 2013).

It is imperative to have systems to regulate preservice training continuously, with significant consequences for institutions that do not meet the required standards, including preventing them from operating. Ecuador has been one of the most active countries of the region in regulating the quality of preservice teacher training institutions. Between 2007 and 2014 all the country's teacher training institutes (28 of them) were assessed and closed, and a reform of education courses in the universities was started (Cevallos Estarellas,

2015). The National University of Education (UNAE) was created, with a mission to become a model center for pre-service teacher training (Cevallos Estarellas and Branwell, 2014). At the other extreme is Argentina, which has numerous preservice training institutions of varying quality: 1,243 teacher training institutes and 61 universities (Mezzadra and Veleda, 2014).

To improve teachers' knowledge and guide their classroom practice, it is crucial to have clear expectations of what teachers should know and be able to do. Setting standards of preservice training provides an opportunity to define what good teaching is, and to further the professionalization of the occupation. Chile's education ministry, for example, through the Center for Training, Experimentation and Pedagogical Research (CPEIP), and in conjunction with universities, created Guiding Standards for Preservice Teacher Training to determine what teachers should know and do in order to be able to teach in a classroom (OREALC/UNESCO, 2014a). The standards are not obligatory but they are linked to the *Inicia* test (a voluntary exam that students take on leaving preservice training), which provides an incentive for institutions to guide their training. The Dominican Republic also has standards on what constitutes good teaching and what is expected of teachers in every knowledge area or grade, so as to steer training in the centers (Inter-American Dialogue, 2015).

Preservice training geared to command of disciplinary and pedagogical content requires a clear alignment with the schools' national standards and a close link with teaching practice during training. These measures are of the utmost importance in giving better training to future teachers, and they demand denser linkages between the teacher training institutions and the education system as a whole.

The careers of teachers and principals

The region needs to move towards a more modern vision of the teaching profession. This entails raising the requirements to enter teaching, establishing meritocratic criteria for promotion, and diversifying the opportunities for professional advancement (without that implying that teachers leave the classroom), as well as implementing incentives to motivate public officials, teachers and principals. Similarly, the career of principals should also be modernized so as to boost their leadership role in the schools.

Greater selectivity in entry to the profession

Most countries of the region have taken significant steps to transfer preservice teacher training from the secondary level (traditionally in teacher training colleges) to the tertiary level, except for Guatemala, Haiti, Honduras, Nicaragua and Suriname, which still train some of their teachers in secondary institutions (OREALC/UNESCO, 2013). Most of the graduates of teacher training programs were trained in university and non-university tertiary institutions, on courses that range from one year in Trinidad and Tobago to six years in Peru (OREALC/UNESCO, 2013).

The practice of requiring only a preservice training qualification to enter the profession is the least rigorous of those examined internationally, since there are education systems elsewhere that require external assessments before candidates can be certified or can secure a teaching post (such as Canada's Ontario province or Spain), and countries that are even more stringent in requiring a probationary period before full admission to the job (Germany, Austria, the Netherlands and others). In Latin America, only Colombia has an obligatory

certifying exam to enter teaching.¹⁴ Chile and Brazil have a voluntary test for those graduating from preservice training (respectively, the Inicia Test and the National Competition Test for Admission to Teaching), but neither have any implications for certification. Moreover, few countries have a system of competitions to teach in public institutions, and in some cases these systems have not been implemented (Colombia, Ecuador, Guatemala at preprimary and primary levels, Honduras, Mexico, Dominican Republic and Peru).

Only a few countries use probationary periods that have consequences for novice teachers (Colombia, Dominican Republic and Belize). For instance, the Dominican Republic's Teaching Statute Regulations make provision for a year-long orientation period at the end of which the teachers are assessed; they are confirmed in their posts if they are rated positively. The orientation period was introduced in the 2014–2015 academic year and provides for a tutor to support the teachers during their induction (EDUCA and Inter-American Dialogue, 2015; Trinidad, 2015).

Despite the progress made on instituting requirements to enter teaching (see **Box 3.2**), not all countries have implemented such measures and, where they exist, they are not exacting enough to act as an effective filter. Whether it be by demanding public competitions or obligatory certifying texts, it is imperative to take decisive steps to introduce more selective admissions systems. Similarly, the lack of monitored probationary periods is a huge flaw in Latin America's education systems.

Meritocratic career advancement

Traditionally, the teaching profession in Latin America has been based on job security, salaries that do not rise much over

Box 3.2.

Requirements to Serve as an Early Childhood Teacher in Latin America

The requirements to work as an early childhood teacher (teaching children from zero to six years old) are laxer than those for teachers at higher levels of education. According to the report by Pardo et al. (2015) on early childhood teachers in Latin America, the background required for a teacher at this level can vary from secondary-level teacher training to non-university and university tertiary education, and in many countries there is a combination of these three requirements. The data reveal wide diversity among countries according to the proportion of early childhood teachers that have professional degrees. Some 19 percent of early childhood teachers and 59 percent of preschool teachers in Colombia have such degrees; 60 percent of early childhood teachers in Brazil have them; and, at the extreme, 100 percent of in-service teachers in Cuba and Trinidad and Tobago have professional degrees.

Source: Pardo et al. (2015).

time, and promotion by track record and seniority (Cuenca, 2015). In recent years several Latin American countries have undertaken reforms to professionalize the profession, based on approaches that give primacy to meritocracy, whereby a post is offered to the best qualified candidate, job security and salaries depend on performance, and teaching is results-oriented. Countries like Peru, Mexico, Colombia, Chile and Ecuador have instituted reforms of the profession.

Ecuador's reform is an example of the meritocratic approach. One of the measures in the period 2007–2015 was the establishment of a promotion scale based more on merit than on seniority (Cuenca, 2015). The different categories are progressive and depend both on years of teaching experience and on passing training courses, scores on teacher assess-

ments and, for the higher grades, obtaining a master's degree in education (Ministerio de Educación Ecuador, n.d.b) Teaching, moreover, offers new professional opportunities, with different roles in school: mentor-teachers, educational advisors, educational auditors, assistant principals and deputy principals, inspectors and deputy inspectors, principals and head teachers, and opportunities for those who want to be in the higher grades of the teaching profession (Cevallos Estarellas, 2015; Ministerio de Educación Ecuador, n.d.c).

Colombia, Peru and other countries have established criteria based on performance, academic background and skills—as well as experience—to move on to new teaching grades. On the other hand, for example, is El Salvador, where promotions from one grade to another depend solely on the teacher's length of service and academic qualifications, and salaries do not vary significantly among the different grades (FUSADES and Inter-American Dialogue, 2015), which means that the profession is more traditional.

Another important aspect of modern teaching careers is the use of performance-related incentives. The international evidence suggests that when they are well designed (for example, when they are linked to measurable quantitative and qualitative criteria, are based on incremental rather than fixed results, and are high enough) incentives are effective (Imberman, 2015). Incentives based on student performance have been especially effective in developing countries because in those contexts the initial performance is poor (Murnane and Ganimian, 2014).

In Latin America, countries like Brazil, Chile, Colombia, Ecuador and Peru have performance-related incentives programs. For example, the Brazilian state of Pernambuco has

implemented an innovative incentives program in schools, in which bonuses are given to all the staff members in a school (not just the teachers) according to the extent to which the school meets goals that the school itself has set for improvements in state learning scores in math and language, and in the pass rates at primary and secondary levels. Chile's National Performance Assessment System (SNED) gives collective incentives to well-performing teachers in publicly financed schools (municipal and subsidized),¹⁵ comparing similar establishments according to three criteria: geographic area (urban/rural), educational level taught (primary/secondary), and socioeconomic level of the students (Mizala, 2014). The evidence attests that SNED has had positive effects on learning, especially in the better performing schools, which are those that compete for the incentives (Rau and Contreras, 2012). The effects of Chile's SNED are interesting because of the scale of the program, in which 90 percent of the country's schools compete for the incentives.

Management leadership

The chief problems facing those holding management positions in the region include the limited autonomy to set targets for the institution or manage the teaching staff, the undefined duration of their posts (because principals tend to spend many years in their jobs), the lack of opportunities for training and professional development (which tend to be of little relevance and do not alter in line with different stages in principals' careers), and the lack of connections among the initiatives that target those in management (Weinstein and Hernández, 2015).

Principals have enormous influence on the effectiveness of the schools and the teachers, and their job must be profes-

sionalized in order to strengthen their leadership within the schools. A professional management career implies rigorous requirements to serve as a school principal, for set time periods, with periodic assessments, and with incentives and good working conditions.

As with teachers, there is a need to move toward meritocratic management selection mechanisms and fixed terms in post. There is a wide range of requirements for school management positions among Latin American countries, where not all call for teaching experience or a master's degree to hold the position. The same holds true for the nature of the selection process. Most countries use merit-based competitions and competitive exams for appointment to leadership positions, using a combination of career path, academic background, standardized tests and oral interviews to identify the most suitable candidates (OREALC/UNESCO, 2014b). The Brazilian state of Ceará, for example, requires applicants to take a multiple-choice test on textual interpretation, logical reasoning and knowledge of education policies. Colombia also sets a test of professional expertise, and holds an oral interview. Peru sets a national test of skills in an initial stage and a local-level casework.

Ecuador provides a good example of professional management policies, having established one of the region's most closely knit policies on formal aspects of principals' positions. First, rigorous requirements were set to serve as a principal or head teacher in a public school. Candidates must have more than five years of classroom experience as a teacher, pass an assessment to serve as a principal, and take part in a public competition to choose the best candidate for the post (Ministerio de Educación Ecuador, n.d.a). These posts, moreover, can be held for four years, with the possibility of one reappoint-

ment, and then another candidate is chosen through public competition. Additionally, Ecuador has regular performance assessments for school management and to determine pay increases (Cevallos Estarellas and Bramwell, 2015).

Continuous training and support systems

To properly determine a system of professional development and support, it must be understood that teachers vary a great deal by age, the kind of preservice training they received, the context in which they work, their experience, the stage of their career and the level they teach (see **Box 3.3**). Hence it is crucial to shape the opportunities for professional development according to the various needs of the teachers. Providing orientation programs for novice teachers, mentoring and continuous training for teachers in service, and channels for collaboration between teachers from the same or other schools are key to supporting teachers' professional practice.

In the region as a whole, orientation programs are common practice only in the English-speaking Caribbean countries (Bruns and Luque, 2014). Belize has one of the best programs to support teachers in their first year in the classroom, including tutoring, classroom observation, mentor support, action-based research programs and assessments. Ecuador has also made progress on these issues. Since 2008 the country has implemented a comprehensive system of professional development called *SíProfe*. The program makes provision for orientation, continuous training, and support for teachers. *SíProfe* offers remedial courses to tackle problems in preservice teacher training, orientation and reception courses, and refresher courses on the current curriculum. An interesting aspect of the program is that some of the courses are based

Box 3.3.

Continuous Professional Development for Early Childhood Teachers

In most Latin American countries, the legal system makes explicit provision for the continuous training or professional development of early childhood teachers, although in some countries such regulations only cover teachers in the public sector. The provision of continuous training varies, with isolated programs or intermittent interventions, as in Brazil, free national programs, as in Argentina, or programs that lead to academic qualifications, as in Chile. Moreover, many Latin American countries lack systematized information on professional development programs for teachers at this level of schooling, which makes it difficult to know the complete range of available programs.

Source: Pardo et al. (2015).

on the deficiencies observed in the students' learning achievement tests (SER tests). By 2012, the program had trained more than 160,000 public school teachers and had run more than 290 training courses, with some teachers taking part in up to three courses (OREALC/UNESCO, 2014a).

Channels for collaboration between teachers are important, because classroom work is done individually but the difficulties tend to be shared. Channels for cooperation help find joint solutions and spread good practices among the teachers in a school. Some initiatives in this direction have been taken in Peru, where mentors work with all the teachers in the school at once to offer advice and guidance in line with the specific characteristics of the context. There are also experimental programs in Rio de Janeiro, where the school day was extended to provide space for inter-teacher collaboration during working hours (Bruns and Luque, 2014).

At the international level the best known case is Japan and its “lesson studies,” in which teachers take turns to teach a class in front of their colleagues, which is then discussed to identify strengths and weaknesses (Darling-Hammond et al., 2010). Countries like Chile, the Dominican Republic, El Salvador, Nicaragua and Guatemala have implemented such initiatives (OREALC/ UNESCO, 2014) but there is little evidence on their implementation and the results.

Continuous support systems for principals are also crucial for the proper functioning of the schools. Few countries of the region have made progress in this regard. Ecuador drew up plans for continuous training, and orientation programs for new principals. Chile has a Principals’ Training Program, which gives scholarships to in-service principals to do postgraduate courses and traineeships. Colombia, in an effort by business (Entrepreneurs for Education), the public sector and academia, launched the Transformative Leading Principals program¹⁶ to strengthen leadership in the schools. The program involves classroom-based and virtual training for principals, including conversations with experts, exchanges with other principals, discussion groups and case studies, as well as direct counseling in the schools. In 2012 the Dominican Republic opened the Principals’ School to train in-service principals in administrative and pedagogical management.

The countries have taken steps to establish continuous professional training programs, but much remains to be done. In particular, it is crucial to accord primacy to programs and initiatives that provide support to teachers and principals in the course of their work, over the traditional approach of offering refresher and training courses.

Management

The reforms needed in the education system include various aspects of the system's management: teacher assessments and their various uses, assigning exceptional teachers to priority contexts, and setting up systems that enable the detection of abuses and breaches of duty.

Assessment for better teaching

The main goal of teacher assessments is to improve the operation of the education system by providing support to teachers. The assessments allow for an analysis of the teachers' effectiveness and readiness, and they provide useful information for professional development activities. Other decisions can be based on the assessments, such as granting incentives to teachers who are rated highly, identifying the need for additional training for weaker teachers, and other staff decisions such as promotions or dismissals. When the assessments offer the teachers opportunities for professional development, but nonetheless the weaker teachers do not improve, stronger measures have to be taken and teachers can be offered early retirement plans or withdrawn from the classroom.

The assessment issue has attracted ever more attention in Latin America. Mexico (in the 1990s) and Colombia (in 2002) were the first countries in the region to establish teacher assessment systems, but several others (such as Chile, Cuba, Ecuador, Honduras and Peru) have introduced such systems since then.

The characteristics of the assessment systems vary a great deal by country. For instance, most of those mentioned have obligatory systems, but the frequency of the assessments varies.

The Colombian system, for example, allows for an annual teacher assessment, while in Chile teachers who are rated well in an assessment are not evaluated again for four years, and only those whose performance is poor have to be reassessed more often (every one or two years according to the level: basic or unsatisfactory). The assessment criteria and the use of the results also vary by country.

Cuba uses several methods, such as classroom observations, professional opinion surveys, standardized student tests, portfolios, professional performance exercises and self-assessment (Valdés Veloz, 2006). In many cases, the assessment results grant teachers access to pay increases and professional development schemes, or they can lead to dismissals in the case of poor assessments (Ministerio de Educación, Gobierno de la Ciudad de Buenos Aires, 2010). Ecuador also has a multiple-method system and both internal and external assessments. The former includes various elements, such as self-assessment by the teacher (5 percent), a co-assessment by another teacher (5 percent), assessments by principals (5 percent), students (8 percent) and parents (12 percent), as well as classroom observation (15 percent). The external assessment measures language skills (10 percent), specific expertise (30 percent) and teaching knowledge (10 percent). The goal of the performance assessment in Ecuador is to foster the teachers' professional development. By contrast, the Dominican Republic uses self-reporting by the teachers as the only assessment method (EDUCA and Inter-American Dialogue, 2015).

In Colombia, the annual assessment covers functional skills (70 percent), referring to performance in specific duties, and behavioral skills (30 percent), such as motivation, attitudes and values, which are assessed by principals in the case of teachers. The skills test that allows access to higher profes-

sional grades and pay increases is voluntary in Colombia. In Chile, by contrast, the assessment that can lead to individual economic incentives, professional development opportunities and penalties consists of a self-assessment (10 percent), a third-party reference report (10 percent), an interview by a peer assessor (20 percent), and a performance portfolio (60 percent) (Ministerio de Educación Chile, 2014).

It is important to understand that there are different ways of measuring teacher performance, such as classroom observations, surveys of students and parents, review of lesson plans, teacher self-assessments, teacher portfolios, and the indicators of the students' results (Hull, 2013). In fact, the possibility of manipulation and the difficulty of identifying problems in teaching make it advisable to use more than one assessment method. The Measures of Effective Teaching (MET) project of the Bill and Melinda Gates Foundation analyzed the effectiveness of three teacher assessment methods in more than 3,000 classrooms in the United States. It concluded that the best performance indicators are those that use a weighting of 50 percent for student performance and 25 percent for the surveys and classroom observations, or one that gives the same weighting (33.3 percent) to each of these methods.

Teacher assessments in Latin America seldom use student performance as a measure of teacher performance. Value-added methods—which take account of student learning measured incrementally—have gained ground in recent years and could be used more widely in the region, in conjunction with other methods. More generally, a clear weakness in teacher assessment systems is the lack of effective mechanisms to provide teachers with the kind of feedback that would help them improve their classroom practice. Indeed, an important

lesson of the MET project is that by highlighting assessment as an instrument of systemic improvement it helps lessen resistance from teachers (Ganimian, 2014).

As with learning assessment, it is crucial to have mechanisms that guarantee the technical credibility of the design and implementation of the assessments. In sum, the development of effective assessment systems requires a credible institutional apparatus, clear assessment criteria, the use of various methods, and the correct determination of how the results will be used.

Better teachers for vulnerable contexts

Latin America is culturally diverse, with problems attendant on inequality, poverty and rurality (OREALC/UNESCO, 2013). Hence the schools face significant challenges in serving highly vulnerable students, and many teachers in the region do not feel equipped to serve in such contexts (Cumsille, 2014). Moreover, while some countries of the region do use bilingual intercultural education, there are difficulties in finding bilingual teachers to work in the countryside (Bruns and Luque, 2014). Policies should thus seek to motivate better equipped teachers to work in those schools, since that would help foster equity in the education system.

The evidence shows that there are various means of attracting and retaining better trained teachers: economic incentives (as long as the amounts are high), orientation and mentoring programs (to retain good teachers in vulnerable schools by offering them support), improving working conditions, giving greater autonomy to do the work, and improving administrative support (Imazeki, 2008; Miller and Chait, 2008). In other words, incentives and good school

management are key to deploying better teachers in contexts of vulnerability.

Despite the fact that there is evidence of what is needed to recruit and retain better equipped teachers in more vulnerable schools, the region has made little progress in this regard. Since 2013, Chile has been offering economic incentives to the best graduates of teacher training institutions to induce them to work in schools where more than 60 percent of the students are vulnerable (Ministerio de Educación Chile, 2013). The incentive is given to graduates who meet one of the three requirements to be accredited as excellent: being in the top 10 percent of their class, scoring more than 650 in the university selection test to study teaching, and ranking in the highest grade of the Inicia test (the voluntary national exam taken at the end of a teacher training course). The impact of this policy has not been studied, and thus its effectiveness in attracting good teachers to vulnerable schools has not been substantiated. Ecuador, for its part, has set up a mentoring program to support teaching practice among both novice and experienced teachers in schools that score poorly on standardized tests (Ministerio de Educación Ecuador, n.d.d). The program focuses on rural, single-teacher, multiple-teacher or bilingual intercultural teacher schools that tend to be among the most vulnerable, as a strategy to address inequity in the education system.

Civil society also has an important role to play in fostering high-quality teaching in schools serving vulnerable children. The experience of the members of the international Teach for All network, which operates in six Latin American countries, exemplifies such efforts (Cumsille and Fiszbein, 2015).

Guaranteeing transparency and probity

The proper handling of resources and probity in the education system still pose a problem in several Latin American countries. There are shortcomings with unwarranted absenteeism on the part of teachers, the assignment of irregular posts related to improper trade union practices, and inflated or undue wage payouts. In Honduras, for example, official competitions for posts in public schools often have been manipulated by political parties and the teachers' associations (FEREMA and Inter-American Dialogue, 2015). In Mexico, teacher absenteeism is about three times the international average and federal resources are used improperly, with irregular payments to union-affiliated workers, undue operational costs for commissioning other services and consultancies, and fraudulent leave payments (Calderón and O'Donoghue, 2013). There is little transparency in the information on teacher attendance, assessment results, or on teachers registered to practice teaching—all of them matters related to the irregular transfer of resources. Transparency International's 2013 report on education reveals that the absentee rate for the period 2004–2011 stood at about 15 percent for Ecuador and Honduras, 13 percent for Peru and 8 percent for Brazil (Transparency International, 2013).

The sale of teaching posts is another problem in the region. In Mexico, for example, more than 12,000 teaching posts were assigned discretionally by teachers' leaders in 2014, without those posts being made subject to the public competition stipulated by law (Wong, 2015). It has not been possible to verify the extent of the sale of teaching posts, but Mexican experts maintain that it happens (Wong, 2015). A case was uncovered by the press in Honduras in 2015, when an alleged intermediary of the selection board in Choluteca

department asked for money in return for a teaching post, a disclosure that prompted 23 complaints about the sale of such positions in that department (El Herald, 2015).

Solving these problems always involves efforts to improve the system's governance, and those efforts affect the interests that pressure groups have built up over many years. Mexico's Oaxaca state provides a recent example of this. The teachers' union had excessive influence on the former Oaxaca State Institute of Public Education (IEEPO), which was responsible for managing the school system, since the union participated in decisions about access to public posts, appointments to supervisory or management positions, and admission to the teaching profession (Fernández, 2015). Changing these practices demanded a restructuring of the institute. The staff quotas reserved for members of the union were eliminated, and individuals affiliated to the union in the previous five years were prohibited from holding positions in the new IEEPO. Appointments to the institute's positions of trust were made on the basis of functional rather than political criteria, and audits were conducted to examine the use of public resources. As regards the management of teaching staff, decisions again came to be based on the assessments stipulated by law, deductions were introduced for teachers who were absent from duty, and contracts could be terminated in cases of non-compliance (Instituto Estatal de Educación Pública de Oaxaca, n.d.).

Improving the monitoring and oversight systems, documenting the existence of ghost teachers, and boosting the number and quality of audits are measures that help address problems such as unwarranted absenteeism. Several countries have introduced information management systems that make it possible to collect data from various sources on the number

of students and teachers, as well as on school materials and facilities, to underpin informed and transparent decisions. The information systems, for example, can collect information on teachers such as their qualifications, attendance, experience and previous jobs, considerations that can be used for a transparent determination of salaries and other benefits. Gambia used these profiles to allocate jobs on the basis of experience and specialization rather than favoritism. South Sudan's system includes fingerprint records of all teachers, a move that enabled the authorities to remove 500 ghost teachers (Transparency International, 2013). Civil society can also play an important role in these efforts, as happened recently in Guatemala, where a system has been introduced to ensure that educational establishments are open. By means of a website, text message or email, citizens can report whether a school is open or closed and thus help monitor the number of effective school days (Paiz, 2015).

Because of a lack of information and transparency, inefficient and often corrupt practices in human resource management persist over time. Given that changing such practices is always a process that prompts resistance, it is particularly important to produce more information and to make it public, so as to disclose existing problems and thereby mobilize social pressure to undertake the necessary changes.

Final remarks

There is no single prescription to implement teacher policies: they can all be carried out in various ways. The process of finding the variant that works best in each country is critical. For that reason we deem it so important to engage in a broad dialogue on the status of teacher policies in all countries, as a means of helping to define the details of each policy. It is

important that those debates be informed by reliable statistical evidence and substantiation. Additionally, the policy implementation processes are crucial to achieving the desired changes in the education system, and this calls for systematic assessment of both processes and results to adjust and correct the policies.

IV. Learning Assessments

The development of learning assessment systems in Latin America received significant impetus from the 1990s onwards as part of efforts to modernize education systems. Gradually, all the countries of the region built and developed their learning assessment systems, albeit to varying degrees (Ferrer, 2006). Today, practically all of them¹⁷ have periodic tests of learning (Ferrer and Fiszbein, 2015).

The past decade has been a time of great change in the region. First, many countries have undergone significant changes in the institutional arrangements related to learning assessment functions. For example, as part of its new national constitution, in 2012 Ecuador established the National Institute of Educational Assessment (Ineval) to take on responsibilities previously in the hands of the ministry of education. Uruguay also set up its National Institute of Educational Assessment. In Mexico, the National Institute for the Assessment of Education (INEE), which had been created by presidential decree in 2002, acquired a stronger legal status in 2013 as a result of a new national education law and a constitutional reform. In Chile, the Agency for the Quality of Education has been responsible for learning assessment since it was created in 2011.

Second, there have been important innovations in the communication of results, such as Brazil's Index of Education Performance, which is available at the school level, or the results of the SABER tests and the Summary Index of Educational Quality in Colombia. Third, the participation of Latin American countries in international tests has also increased over the last decade.

The countries of the region recognize that strengthening their assessment systems is an important goal of good education policy (OEI, 2012), especially in the context of the post-2015 Sustainable Development Goals which, unlike the Millennium Development Goals, include learning measurement (United Nations, 2014).

There is no doubt that large-scale, standardized learning assessment systems in Latin America have gained in visibility and strength, and have assumed a prominent role in the general debate on educational quality. This progress, however, has not been automatic. To bring about this strengthening, the countries fought to firmly maintain the form and substance of what already existed. And in some cases they made changes and adjustments in order to ensure the stability and continuity of action in times of adversity.

Institutional frameworks

There is no single institutional model for assessment. A growing number of countries have sought to establish autonomous (or semi-autonomous) institutions with responsibility for learning assessments, while others have retained these functions in specialized units within the ministries of education.

Although the common view among many experts has been that institutional autonomy is a necessary condition for the development of solid and credible assessment systems, in reality (Ferrer and Fiszbein, 2015) there are countries (such as Guatemala and Peru) in which the ministries have been able to do solid work. There is still some debate about whether these units should become autonomous agencies outside the ministry, but the technical capacity and transparency they

have displayed over the years make the question of institutional change a lesser priority.¹⁸ Naturally, we cannot know what would have happened if countries had chosen the option of establishing autonomous institutions, but the fact that assessment responsibilities are within the ministry of education is not necessarily a recipe for failure.

That said, there is evidence that the institutes have certain advantages over the ministerial units because of their greater autonomy. First, in places where the institutional obstacles (such as hiring rules) make it difficult to retain highly qualified technical staff within the ministry's bureaucracy, autonomy can help create more efficient conditions for capacity development. The Colombian Institute for the Assessment of Education (ICFES) and Brazil's National Institute of Studies and Research (INEP) seem to have benefited in this regard (Ferrer and Fiszbein, 2015).

Second, autonomy from the ministries offers a greater degree of protection from political pressures than is enjoyed by units that report directly to authorities within the ministries. In practice, however, in the last decade there has been little difference in this regard between countries with different institutional frameworks. The last two striking instances when results were censored occurred around 2000, when Mexico and Peru banned the publication of international or national assessment data.

It is worth mentioning two caveats about the foregoing. First, legal autonomy does not guarantee political autonomy: political pressures can weaken the independence of seemingly autonomous bodies. Second, autonomy does not in itself resolve the problem of scant credibility that afflicts many assessment systems. Unless the governance mechanisms of the

autonomous assessment institutes provide adequate oversight of their activities, doubts may persist about the trustworthiness of their results. The lesson for countries that are thinking about establishing autonomous assessment institutes is that they require a strong legal framework—including governance agreements that guarantee appropriate technical oversight, adequate financing, and the ability to take independent decisions about the necessary staff.

Indeed, there has been a series of changes in the national institutes, especially in terms of new legal provisions that give them greater administrative autonomy. Colombia's ICFES, for example, now has more responsibility to offer testing services, collect revenue and, as a result of the 2009 reforms, retain surpluses to reinvest them in technical upgrades and program development. Mexico's INEE underwent a significant institutional change that not only gave it greater autonomy but also more responsibilities, including the design and leadership of a National Assessment System that involves assessment programs managed by INEE and by the secretariat of public education (SEP). Brazil's INEP has been a self-sufficient organization for many years and, although efforts to establish it as a wholly independent body were unsuccessful because of a legal lacuna as regards public agencies, it still has broad discretionary power for self-management and administration.

A third area in which there seems to have been a substantial difference between the institutes and the ministerial units is the possibility of designing and effectively implementing medium- and long-term assessment plans. The institutes tend to make long-term decisions about assessment programs (including the population to be tested, content coverage, test administration cycles and so on), and they stick to them for as long as they deem them useful and relevant. For the min-

isterial units, on the other hand, it is much more difficult to sustain long-term assessment plans because of frequent—and in some cases erratic and arbitrary—demands by political authorities, especially when there is a change in government. The institutes are also prone to receive such demands but they have much more legal power and authority to debate the advisability of the changes and, in the final analysis, to decide whether they will be implemented. In Mexico, under its new legal and constitutional framework, INEE now can not only decide freely on its own assessment programs but can also dictate what SEP can and cannot do in terms of educational assessment (Bracho and Zorrilla, 2014; INEE, 2015).

In the last decade the unions have become less active in resisting assessments of student learning, probably because it has been shown that these kinds of tests are not designed as a means of punishing teachers. Nonetheless, in some cases they have been more active—not always successfully—in preventing the implementation of teacher assessment programs designed to provide economic incentives or to regulate access to new teaching posts in the education system.

Dissemination and use of results

The conversion of the data arising from learning assessments into information that is useful for and usable by various actors in the education system remains a challenge in Latin America. In some cases there may be problems in how the results are reported—for example, the assessment units' websites tend to be complex and hard to navigate (Ferrer and Fiszbein, 2015).¹⁹ Despite the variety of reports available in digital format, official website are often poorly designed: it takes time and effort to find the reports, to distinguish among the different types of assessments, and often

to open or download files because of system crashes. Often the general information and the specific data are repeated in different subsites that are under confusing link names, or they are all published together without a clear specification of the different readerships.

These flaws might not be so critical for researchers, who tend to have the willingness and experience to conduct complex searches. But judged as instruments for non-expert users, such as teachers or interested citizens, these websites need to be improved if they are to be accessible and easy to navigate.²⁰

Independently of how the reports are delivered to readers, whether it be in soft or hard copy, an abiding and significant problem is the lack of capacity on the part of education communities—especially at the school level—to understand and analyze the data presented. Text formats are often unfamiliar to them, partly because they were not equipped to interpret them during their training as educators (Ferrer and Fiszbein, 2015). Countries have tried different means of presenting these formats in a simpler way, using all kinds of drawings, photographs, color references, simplified language and an abundance of examples, both static (on paper) and dynamic (as with Prezi-like presentations and videos).

Nonetheless, no format seems to yield satisfactory results in terms of the interpretation and use of the reports.²¹ At least two factors could be hampering progress in this regard. First, local educators (teachers, principals, supervisors), as well as families, seem to be insufficiently skilled in reading and basic math to interpret noncontinuous, nonverbal texts. Not even face-to-face workshops seem able to counteract this shortfall in cognitive readiness. Second, it can be assumed the low-stakes assessments—those whose outcomes do not have direct

consequences for individuals—offer little incentive to make the effort to grasp the meaning and relevance of these texts.

The presentation of the reports, however, is only part of the problem. In many cases, the actual demand for data is a binding constraint. The fact is that the countries of Latin America are still struggling to interest teachers and families in the data produced by the learning assessment systems. This area offers fertile ground for an experimental research approach that tests alternative ways of reporting the results and involves education stakeholders in the use of those results.²²

Independently of whether assessments today seek to compare or classify students in a high-stakes evaluation, or whether they are meant to provide information on the quality of learning, they always present achievement scales split into performance levels. The assessments show not only the percentage of students in each segment but also a substantive description of what students know and can do in each level of the scale. Without question, this methodology and reporting format have much more potential for pedagogical interventions than a report on the average percentage of questions answered correctly.

The past decade offers a series of examples of how census-based tests can be used to devise high-quality educational indices, such as Brazil's IDEB and Colombia's ISCE. These indices are one of the most important steps forward as regards the use of data in the region.

They not only simplify the presentation and reporting of results, but also provide a broader perspective that is not based on presenting learning outcomes as a single measure of quality.

Indices are developed with two main purposes. The first is to secure a measure of educational quality that takes account of at least three different variables, not just learning attainments. Brazil's IDEB combines the learning results with the students' annual pass rate and the dropout rates, while simultaneously measuring annual progress on the index in all primary schools in the system.²³ Colombia's ISCE considers student performance along with pass and dropout rates, as well as the school environment. This index also measures school-by-school yearly progress. Both indices provide data on learning attainments from the national assessments Prova Brasil and SABER, respectively. The indices also offer policy-makers a way of measuring progress when they set medium- and long-term targets. For example, Brazil has announced its intention of improving its results, in terms of rising values on the index, up to 2021. This is clearly a sign of political accountability that was unheard of at the national level in Latin America until the start of this decade.²⁴

The second purpose for which the indices have been developed is to establish incentives programs for those schools that make progress on the index values. It remains to be seen if these incentives have or will have a positive impact on students' learning. To date there is insufficient research evidence to indicate how adequate or effective they are, but the development of more complex measures is a positive indication that the use of assessment data is gaining in importance among these countries. Incentives programs based solely on learning achievement data are much more likely to foster corruption and data manipulation, as happened with the Enlace assessment run by the Mexico's secretariat for public education.²⁵

One of the main signs of progress in the field of large-scale assessments in Latin America is the way in which the results

have helped instill the issue of educational quality in national debates. Most national education goals, as expressed in a variety of medium- and long-term government plans, and in international agencies' guidelines and support measures to improve educational quality in the region, include learning results as a key indicator for measuring the quality of education and progress over time.

The press has played an important role reporting the results to the public. A decade ago the press had begun to pay attention to learning indicators, especially after the Latin American countries began taking part in PISA and it became clear how much the region's educational results were lagging. Initially, the comparative international results were received with great anticipation, mostly with an eye to publishing negative news and demonizing education systems in the headlines, which focused solely on rankings and never went deeper into causes or the complexity of improving educational conditions. Something similar happened with national results, especially in countries that were implementing or were beginning to implement census-based assessments in the final years of secondary school.

Today, although the news about results is rarely good enough, the media and journalists are increasingly knowledgeable about educational issues. Moreover, education experts have begun to be more prominent in the established media, rather than confining themselves solely to academia. Bad news still makes for negative headlines and spurs harsh criticism of government policies, but at the same time it seems to help nourish further debate on educational quality in a number of forums. Probably because of this mass coverage, political leaders are paying more attention to the importance and prominence of learning assessment results, though

they do not necessarily feel responsible for those results. They also see the need for more coherent measures conducive to improving the results.

Developing the analytical capacity to use the data among Latin American media and civil society has probably been part of the (slow) process of exercising democratic rights, and thus has been hard to hasten and manage through external efforts. Nonetheless, if one thinks of the countries in which donors have been active in strengthening the capacities of civil society organizations and the media, it is worth exploring efforts to build capacities to demand and analyze data on education.

Participation in international tests

Latin American countries increasingly participate in international test (see **Table 4.1**). The trends show that (a) a growing number of countries in the region have decided to take part in PISA and LLECE (UNESCO's Latin American Laboratory for the Assessment of the Quality of Education); (b) only two to three countries took part in TIMSS between 1999 and 2011; (c) Latin American countries have shown little interest in PIRLS (only one took part in the latest round, while the number of participating countries grew worldwide); and (d) more Latin American countries have become interested in the assessment of citizenship skills through IEA's ICCS test (formerly known as CIV-ED).

Experience indicates that such participation confers both political and technical benefits (Ferrer and Fiszbein, 2015). On the political side, countries deem it important and necessary to be compared with their regional peers, as with LLECE, as well as with highly industrialized countries in Asia, Europe

Table 4.1.
Participation in International Tests

Tests	Latin America	Rest of the world
OECD-PISA 2003	3	38
OECD-PISA 2006	6	51
OECD-PISA 2009-2010	9	66
OECD-PISA 2012	8	57
OECD-PISA 2015	9	66
IEA-ICCS 2009	6	32
IEA-TIMSS 2003	2	47
IEA-TIMSS 2007	2	57
IEA-TIMSS 2011	2	61
IEA-TIMSS 2015	2	57
IEA-PIRLS 2011	1	47
LLECE-SERCE 2006	16	0
LLECE-TERCE 2013	15	0

Source: Ferrer and Fiszbein (2015).

and North America, especially through the OECD’s PISA tests. Given that several countries of the region are members of the OECD or hope to be so in the not too distant future, the political value of taking part in international assessments seems to have increased over time. Geopolitical interests might explain why some countries, such as Argentina, still participate in PISA even though they disparage the results and disregard using the data, or why Mexico allows the OECD not only to assess learning through PISA, but also to offer specific recommendations and guidelines for national education policy.

Even today, one of the prime objections to PISA is that it makes no sense to invest time and economic resources in an

assessment project that always features Latin American countries among the lowest ranked. These objections, however, are met by robust counterarguments on at least two fronts. On the one hand, as in Peru, there has been some improvement in the results, which suggests that a combination of better education policies, more investment and a better overall economic performance can lead to better results. Moreover, coming last in the rankings can have positive effects by spurring national debate and helping secure public support for the introduction of difficult or controversial policy measures, such as reforms to teacher training or to teacher assessment programs.

From a technical standpoint, national assessment units have found and continue to find—especially with PISA—a great opportunity to develop and strengthen their technical and methodological capacities. Although Latin American countries do not play a prominent role in test design and development, taking part in such programs offers several opportunities for technical exchange and gaining familiarity with ever more complex measuring methodologies. Moreover, PISA is conducted regularly every three years, a circumstance valued highly by countries interested in undertaking longitudinal analyses of progress in educational quality.

Three Latin American countries that had not before participated in PISA (Ecuador, Guatemala and Paraguay), took part in the recent PISA for Development program (PISA-D). That initiative may further this trend for at least two reasons. First, it will include items that measure very basic skills, which in turn will help to draw clearer distinctions and reveal performance differences among the millions of students who are very likely to be at the “below 1” level of the regular PISA. Second, countries will receive more technical assistance.

PISA-D plans to pair inexperienced country teams with the region's strongest technical specialists in order to foster exchange, collaboration and technical development.

In general, however, international assessments provide an abundance of information that is not sufficiently used. The data can be very useful for deep analyses of the contextual factors behind the results, or to rigorously compare one country's performance with that of education systems throughout the world. The information is helpful in designing and implementing policy reforms or specific improvements in education systems. Despite this under-use, it is apparent that PISA's assessment framework, constructs and structure have markedly influenced the models and contents of national assessments in Latin America (Ferrer and Fiszbein, 2015). They have also had substantial influence on curriculum design, in terms of both content and structure.

Final remarks

There has been a very clear strengthening of Latin America's educational assessment systems during the past decade, but many weaknesses persist. Latin American countries' experience confirms that building an effective educational assessment system that informs and supports quality improvements is a laborious and complex undertaking that calls for an alignment of learning goals, standards, the curriculum and other key matters such as teacher training. At the moment, it seems that only Brazil, Chile and Colombia are reaching the point of developing assessment systems that link up the production and use of data with users inside and outside the school system.

Educational assessment is being reinforced in Latin America, but even greater consolidation is still needed. Making

good use of data to improve education remains the Achilles heel of such efforts. A very positive aspect of the experience gained is that there are good practices in several countries from which the whole region can learn. The lesson is that this is a path worth taking, even though it calls for long-term commitment and sustained political support.

V. New Technologies in Education

Education systems in Latin America are still very traditional in their outlook. For most students, the learning experience is not much different from that of previous generations. Improving the quality of education will require profound innovations. New technologies might be an important aspect of these innovations. In this chapter we explore some of the challenges faced by education systems in the region in their effort to expand the use of these technologies in education, and we consider the lessons learned from international experience in this area.

Greater access but insufficient impact

Over the past two decades, the incorporation of technologies into the education sector is a subject that has received mounting attention in the region. This has given impetus to national agendas in the sector and has led to the allocation of more resources. Thirteen education ministries in the region had a unit specializing in technology policies in education in 2010 (Hinestroza and Labbé, 2011). The main goals of these policies are achieving innovations or changes in teaching and learning practices (81 percent), as well as enhancing professional teacher training (71 percent) (Sunkel, Trucco and Espejo, 2013). Both goals are related to the main challenge faced by education systems in the region: improving the low levels of academic achievement (math, language), while at the same time developing the twenty-first century skills that young people need to enter the labor market (see Chapter VI for more on this).²⁶

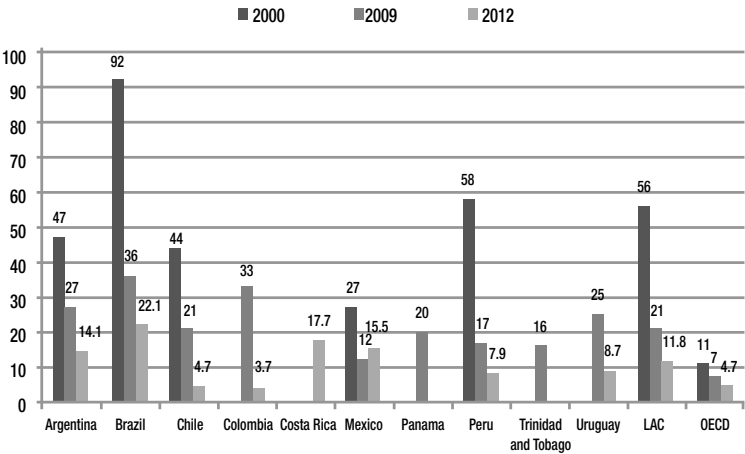
Although there are no regional studies that quantify the investment in technologies in education, the greater alloca-

tion of resources is evident from assessments of certain country cases. For example, the Plan Ceibal in Uruguay, which has been distributing laptops and tablets among students since 2007, had annual funding of US\$50 million up to 2014 (Vaillant, 2013b). The public funds allocated amounted to US\$100 per student per year, which represented 5 percent of the total public expenditure in primary and basic middle education, and 0.1 percent of Uruguay's GDP (Vaillant, 2013b). The budget allocation for the Plan Ceibal in 2016 and 2017 is expected to be US\$100 million and US\$250 million, respectively (Gobierno de Uruguay, 2015). In Mexico, between 2000 and 2012, several programs geared to technology in basic education classrooms were implemented, with an approved total budget of more than 39 billion Mexican pesos, or more than US\$2 billion (Mexicanos Primero, 2013). The Digital Inclusion Program, which provides laptops and tablets to primary school students, has a budget equivalent to US\$90 million in 2016, which represents 0.6 percent of the budgeted expenditure for Mexico's public education secretariat (CIU, 2015).

Latin American countries have made great strides in increasing access to computers in schools (see **Figure 5.1**). According to PISA data, the region's secondary schools had an average of 56 and 21 students per computer in 2000 and 2009, respectively (Sunkel, Trucco and Espejo, 2013). That number fell to 12 students per computer in 2012 (OECD, 2015b). Moreover, by 2009, 93 percent of 15 year-old students in the countries participating in PISA attended institutions with at least one computer available for academic use (Arias and Cristiá, 2014).

As regards technology infrastructure, several countries started implementing One to One programs (such as One

Figure 5.1.
Number of Students per Computer in Schools, 2000,
2009 and 2012



Source: Arias Ortiz and Cristiá (2014), and OECD (2015b) – Data from PISA 2000, 2009 and 2012.

Laptop Per Child). By 2014, 17 such programs had been launched and close to 10 million laptops had been distributed to children and teachers, making Latin America the region with the most One to One programs worldwide (Arias and Cristiá, 2014). Most of these efforts were directed towards the primary level by education ministries, although some foundations (such as the Fundación Pies Descalzos in Colombia and the Fundación Zamora Terán in Nicaragua) and private companies (such as Telmex in Mexico) also participated.

The countries of the region also increased Internet connectivity in schools. According to PISA 2012 data, Chile, Costa Rica, Mexico and Uruguay had an average Internet coverage of ~75 percent, comparable to the average of OECD countries (~85 percent). In Chile and Costa Rica, close to 80 percent and 67 percent of students, respectively, have ac-

cess to computers with Internet connectivity. Furthermore, most countries set up computer labs, following the pioneering experience of Chile and Costa Rica at the beginning of the 1990s (Arias and Cristiá, 2014).

There is not much up-to-date information on the costs of technologies in education. A study by Berlinski, Busso, Cristiá and Severín (2011) addresses the cost of three models of technology in education for Latin America. Arias and Cristiá (2014) sum them up as follows: “the first, costing US\$23 per student per year, involves the use of computer labs to provide students with two hours of weekly access to computers, using free content and with limited training for teachers. The second model, costing US\$94 per student per year, provides personal laptops to students, free content and limited training for teachers. The third model, costing US\$217, includes personal laptops for students, the development of content and intensive training, complemented by regular visits from supervisors.” Although technological advances have helped reduce the cost of equipment and connectivity, these still represent a significant burden for Latin American countries, especially poorer nations, which on average invest close to US\$1,800 (PPP) per year per student²⁷ at all levels. This average masks significant differences between countries; for example, Chile and Guatemala spend US\$3,490 and US\$676 per student, respectively.

Despite the efforts made in the areas of access and connectivity, technological innovation initiatives to date have had little effect on improving students’ learning. For example, a large-scale random assessment of the One Laptop per Child (OLPC) program in Peru, which increased the number of computers per student from 0.12 to 1.18 in the recipient schools and significantly increased the use of computers both

at home and at school, did not find evidence of any effect on the students' academic achievement in math or language (Cristiá et al., 2012). Likewise, a study of the impact of the Plan Ceibal in Uruguay found that the program had not had an impact on math or reading, prompting the conclusion that "technology on its own cannot have an impact on learning" (de Melo et al, 2013). According to an OECD report (2015b), international experience has provided no clear evidence that computers and other technologies, on their own, have a positive effect on learning.

There are several reasons for the technologies' lack of effectiveness. First, the focus on providing access to new technologies has turned into a populist strategy for many governments in an effort to demonstrate progress on the education agenda. One to One models are very attractive politically, and are presented as high-visibility "quick fix" solutions to quality and equality problems in education (Severín and Capota, 2011). The popularity of such programs puts pressure on political leaders to promote them even more (Santiago et al., 2010).

Second, the limited impact of technology programs is also partly related to deficiencies in their implementation, which in some cases involves corruption. In Mexico, according to Mexicanos Primero (2013b), the five programs geared to improving technologies in education that received the most resources between 2000 and 2012 were marked by unjustifiable discrepancies between the amounts approved and the amounts spent. The Enciclomedia program, for example, exceeded its budget by 39 percent and audits detected irregularities such as unjustified contracts, stolen equipment, and lack of oversight.

Third, many teachers do not have the skills needed to take advantage of the new technologies, often because of a lack

of digital literacy (Fraillon, Ainley, Schulz, Friedman and Gebhardt, 2014). Educators themselves state that inadequate training is the main barrier to the integration of new technologies (SITEAL, 2015). Only about a third of teachers in the region are qualified to use them. Although some receive initial training, few have continuous development applied to pedagogic techniques and specific subjects. In Chile, for example, 53 percent of teachers report that they have taken certified courses on the basic use of new technologies, but only 31 percent confirmed that they had taken a course on pedagogic applications and 11 percent indicated that the course focused on their subject (Swig, 2014). It is no use having a computer, tablet or interactive whiteboard if one does not know how to use it. Similarly, without a stable and sustainable connection, which is still not systematically available in the region, the use of Internet-ready devices cannot be maximized (Funsepa, 2016). Beyond stable connectivity, however, wherever possible technologies that support the learning process should be able to function and be useful on their own, even if the Internet connection is disrupted or there is insufficient broadband.

In that light, it is worth asking: how can we design and implement technological initiatives that have a real and positive impact, especially in an environment of constant and rapid technological change? How can we learn from mistakes as we go along, without having to rely on long-term studies? What lessons can be drawn from successful experiences and good practices in other countries?

The potential of technology in education

Although there are significant differences between countries, social groups and regions, it is generally recognized that

hardware (access to equipment and technological infrastructure) does not currently pose the main problem. The difficulties reside in the way the hardware is used for educational ends. In this sense, the international experience shows that some methods have been more successful than others and that they can have a positive impact on learning.

Arias and Cristiá (2014) reviewed 15 studies on the use of technologies in education in India, China and Latin America (Ecuador, Colombia and Peru), and showed that programs featuring the guided use of technologies are much more effective in their impact on learning than non-guided use programs, and that they improve performance in math and language by up to four times. Guided use programs provide clear guidelines on the frequency and type of expected use of the technologies, specifically defining the target subject, the software to be used and the weekly time allocation (the three “Ss”: Subject, Software, Schedule). Non-guided use programs mainly focus on providing resources (computers, Internet, general training) and offer little guidance on how to use them. A plan implemented in Indian primary schools serves as an example of a successful guided use program. It provided fourth-grade students with two weekly hours of shared computer access focusing on math, using software that adapted exercise difficulty to individual students. A rigorous assessment (Banerjee et al., 2005) documented the sizeable positive effects of this plan on math learning.

Some common characteristics of the 15 guided use programs assessed are: (a) computers are used at school, not at home; (b) students usually share the computers and equipment in groups; (c) programs focus on one subject matter (for example, math or language); (d) instruction with computers complements the regular class schedule and emphasizes

practical exercises aligned with the curriculum; and (e) the instructors leading the sessions are expected to solve logistical problems and questions regarding the software, as opposed to providing instruction on the target subject.

In recent years, one of the most celebrated technological innovations worldwide has been Khan Academy, an online platform that provides practical exercises, instructional videos and a personalized learning panel that allows students to learn at their own pace. This platform has become very popular, even among teachers,²⁸ and has started to be used in the region. Some governments include the Khan Academy model in their public policies. In Mexico, for example, the general directorate for technological industrial education (DGETI), attached to the under-secretariat for secondary education (SEMS), started using pilot programs with the Khan Academy platform to provide support to about 230,000 students in math courses. Although there are no large-scale assessments of these efforts, a pilot project in Guatemala showed that use of the Khan Academy program had better results than an approach that only provides support to schools through a combination of computers and teacher training (Funsepa, 2016).²⁹

Preservice teacher training systems at the international level are characterized by a deficit in training in the skills needed to teach with technologies in education (Brun, 2011). Recognizing the difficulty of achieving results without teachers adequately trained to use the technologies, several countries have developed technological standards for practicing teachers and for those in training. These aim to define more clearly the skills and abilities students of education should acquire throughout their training, and therefore the skills and abilities that the teaching staff of the training institution should attain in order to reach the set goals (SITEAL, 2014). In accordance with

the standards, some countries have created teacher training models supported by the use of technologies in education. For example, since 2014 the SíProfe program in Ecuador offers most of its continuing education courses online (Cumsille and Fiszbein, 2015). Peer-to-peer networks (teacher-teacher networks), which allow for the exchange of experiences among teachers virtually, were also created and were well received by teachers in the region (SITEAL, 2014).³⁰

Although much of the attention has focused on the use of computers, an important element of efforts to use technology for educational goals is related to the prospect of extending distance learning. Several countries in the region have developed successful radio and television education programs, including Bolivia, Costa Rica, El Salvador, Haiti, Honduras, Nicaragua, the Dominican Republic and Venezuela (Trucano, 2010). There is significant and consistent evidence that “interactive radio instruction” (IRI) can increase learning in different subject matters, ages, genders and geographies, both rural and urban (World Bank, 2005).

Some television programs were also created, to mixed effect. Telesecundaria, a formal public education service in Mexico that provides televised lessons for students in rural areas, was shown to have positive preliminary outcomes, to the point that the model accounted for more than 20 percent of those enrolled in 2007. The PISA 2003 results, however, showed that, controlling for other factors, telesecundaria had worse results than most other types of secondary education (Patrinos, 2007). Despite the challenges, an analysis based on the results of the Teaching and Learning International Survey (TALIS) in 2013 highlights some of the strengths of the telesecundarias from the teaching standpoint. They include a positive school environment, close cooperation among colleagues, fewer

problems with students, high levels of work satisfaction, and a strong commitment to students (Beckhoff et al., 2015).

Mobile telephone use is growing at a significant pace in Latin America, reaching a 95 percent penetration rate in 2011, including among lower socioeconomic groups (UNESCO, 2011). While it is true that these types of cellphones have less educational potential than smartphones (which have an estimated penetration of 55 percent), their widespread use makes them good low-cost candidates for mobile learning programs, given that most of the population already owns one (UNESCO, 2012a). Despite the high levels of penetration, educational initiatives with mobile devices (m-learning) are still at preliminary stages of development (see **Box 5.1**). The same can be said of mobile learning policies. Colombia is the only country in the region that actively supports the use of mobile telephones in education, both through specific, publicly funded projects or programs and through governmental initiatives that include particular measures and incentives (UNESCO, 2012a).

Box 5.1.

Mobile Learning Initiatives in Latin America

Most of the initiatives are pilot projects driven forward by non-profit organizations or universities; they are typically geared towards small groups and focus on particular or local needs. Some programs:

1. National Literacy Program (Colombia). The government uses this program to distribute mobile devices to illiterate youths and adults from disadvantaged groups in Colombia. The devices include SIM cards charged with six modules of interactive and self-directed educational content, focusing on improving the users’ basic literacy skills. An Internet connection is not required to access the content.

(It continues)

Box 5.1.

Mobile Learning Initiatives in Latin America

(continued)

2. PSU Mobile (Chile). This application, which is free to download, offers access to exercises, games and podcasts, organized thematically, for use from the cellphone. It also provides information on available university degrees, a calendar with important dates and the schedule for the University Selection Test (PSU)—the national university entrance exam—and the history of results of the completed exercises.

3. Learning Assessment through Cellphones (Paraguay). The education ministry launched this pilot project in 2011 to explore the possibility of administering standardized tests through students' mobile telephones. The assessment, which focused on math, language and Spanish literature, was designed by curricular specialists in order to address the key content areas of the national curriculum.

4. BridgeIT (several countries). The global initiative BridgeIT launched the program Educational Bridges in 2009, directed at students accounting for 70 percent of the poorest socioeconomic groups in the country. The program focuses on improving skills in math, science and English for students in the fifth and sixth grades of primary school. BridgeIT also launched the Roots of Mobile Learning program in Colombia in 2012, focusing on teaching social sciences and math to fourth—and fifth—grade students, who receive coaching and support to help teachers incorporate mobile technologies and digital resources into their study plans.

Latin America is expected to have the most significant growth in m-learning of all regions of the world for the period 2014–2019, with an estimated projection of 21 percent (Adkins, 2015).

Sources: UNESCO (2012a); Adkins (2015).

Technology has also helped support the planning of classes and interaction with and among students. Technical tools such as intranet and various digital educational content

resources have helped innovate in teaching models (Sunkel, Trucco and Espejo, 2013). Moreover, online communities and educational portals have emerged, allowing for the exchange of content, ideas, knowledge and experiences for collective benefit.³¹ The Latin American Network of Educational Portals (RELPE) has performed this integrating function, and has signed agreements with international platforms such as Khan Academy (SITEAL, 2014).

Beyond the benefits for teaching and learning, new technologies can facilitate access to information for decision-making, and help promote greater transparency in education management systems. In particular, the technologies have helped in the compiling, monitoring and analysis of data on different aspects of the education system, as well as its dissemination among education personnel, parents and the general public (Sunkel, Trucco and Espejo, 2011). Some countries have developed online education statistics systems, such as the National System of Education Information Unit (USINIEH) in Honduras, which provides data on student learning by educational institution, grade, section and even by student; this helps the decision-making process in schools and classrooms (FEREMA and Inter-American Dialogue, 2015). Some education ministries offer public services such as email, search engines and web-based registry. For example, the official website in Colombia provides citizen services for registering enquiries, information on the status of administrative processes, online surveys, chat rooms and forums managed by the portal Aprende Colombia (Sunkel, Trucco and Espejo, 2011).

It is also worth mentioning citizen-driven initiatives that use technology to improve education systems. An example is the system for monitoring compliance with the number

of school days developed by Entrepreneurs for Education in Guatemala, which allows citizens voluntarily to participate by quantifying the number of school days in the different educational centers. Monitors report through web pages, email or text messages if a center is open or closed, and can use a real-time interactive map that provides information and serves as a warning call to both schools and the authorities (Paiz, 2015).

The future direction

To a large extent, Latin American countries have to date followed a strategy of investing in technology and adapting its use to the resources available, rather than to the skills demanded by students and labor markets. This situation requires a 180-degree turn. That is, first, educational goals must be established and then the management systems must invest in strategies (which might or might not include technologies) that help achieve those goals. This necessarily leads to an emphasis on the adoption of guided use programs that specifically define the subject matter, the software and the weekly time allocation of technologies, and that are implemented by trained teachers³² and principals.³³ Moreover, the new technologies should be leveraged to promote collaborative projects that foster twenty-first century skills among students and thereby respond to labor demands (see Chapter VI).

Investment in new technologies can follow many different paths that involve different costs. Beyond the investment in technological equipment, it is important to take into account the costs involved in training teachers, developing resources and adapting the existing infrastructure, as well as the opportunity costs of unrealized projects (OECD, 2015b). Innovation in technologies can also turn into a challenge: the program

that introduced Khan Academy in Guatemala, for example, bought tablets that just a year later did not support the software upgrades (Funsepa, 2016). In some cases, public-private partnerships in the technology field can complement the possible limitations of the education system and help promote efficiency, productivity and quality.

In this context, resources such as radio and television must not be disregarded, especially if there is no empirical evidence of the effectiveness of more expensive technologies. New ways of exploiting installed technologies can be explored, such as the computer labs that many countries in the region already have in their schools. For example, an impact assessment has shown that in India the shared use of already available computers improved the students' learning of math at a very low cost (Banerjee et al., 2005). In Paraguay, the simple use of audio CDs as part of the Tikichuela program had positive effects on math learning (Näslund-Hadley et al., 2012).

Similarly, Beuermann et al. (2015) found that while the provision of personal laptops in Peru's OLPC program increased students' scores in a skills test for those computers, it did not improve the skills involved in the use of computers with the Windows system, which is probably a better indicator of the digital skills demanded in the market. In contrast, Bet et al. (2014) found that a program that provided an additional computer for every 40 students in the school led to improved digital skills in the use of computers with the Windows system at a considerably lower cost.

Beyond the technology selected, program implementation must unfold in phases, evaluating and making modifications where necessary as the process advances. The Plan Ceibal, for example, started in one school, then in a district, and little by

little it was scaled up until it covered the whole of Uruguay. Progressive implementation also allows for the evaluation of different models and technologies, so as to identify those that have the best results. The availability of that type of evaluation is still limited, not just in Latin America but worldwide.³⁴

For new technology-based initiatives to yield the expected results in the education system, an ecosystem has to be created to bring about the true integration of various components: access, pedagogy, use, content, appropriation and management. This ecosystem includes various stakeholders—students, teachers, management teams, parents and authorities—and requires that the components complement each other. A progressive and gradual professional development plan for teaching must be created, starting with digital literacy and adapted to the implementation of guided use technology programs (Fraillon et al., 2014). The Enlaces program in Chile (see **Box 5.2**) shows that it is possible to design and implement programs that involve diverse actors from the education system.

Ultimately, the effectiveness of investments in technologies applied to education will depend on the quality of their management. After identifying, adapting and implementing strategies that have proven to be successful, the policies for technology in education must establish clear goals and be based on a diagnosis of key indicators, which to date are available in few countries in the region (Arias and Cristiá, 2014). In parallel, it is essential to design reliable monitoring and assessment systems, based on the collection and analysis of empirical data, which will determine the impact of the technologies on education and facilitate informed decision-making on the policies. Recognizing that the purchase and distribution programs of new technologies can be affected

Box 5.2.

Enlaces and the Integration of New Technologies in Schools

Enlaces, the Education and Technology Department of the Education Ministry in Chile, was born as a pilot project in 1992. The program works with all subsidized schools in Chile, providing teaching strategies with the use of technologies, training teachers, offering workshops for students, and providing digital education resources and infrastructure.

Enlaces provides constant teaching support and proposes a set of standards that enable the continuous training of teachers, including through virtual courses that teachers can take with the support of online tutors. Enlaces also developed skills standards for principals and management teams, and on that basis offers training that focuses on promoting their leadership in integrating new technologies in school.

In 2011 Enlaces applied the SIMCE TIC, an unprecedented assessment of 10,000 students to determine their level of development in information technology learning skills—the ability to solve information, communication and knowledge problems, as well as legal, social and ethical dilemmas in the digital context.

Sources: Enlaces (2012); SITEAL (2014). Note: TIC = information and communication technologies.

by corruption and mismanagement of resources, transparency must be guaranteed in the execution, measurement and reported results of these programs. Only if these principles are applied fully will the conditions exist to ensure that new technologies can help improve the quality of the teaching and the learning standards.

Final remarks

The available evidence regarding the effectiveness of technologies in improving student learning does not currently

justify costly investments, especially in the poorest countries. Less burdensome options (such as distance learning or computer labs) might be less attractive politically but should not be disregarded, given that in some cases they are more cost-effective. As new technologies develop, however, the costs will continue to decline and the universe of possible investments will expand. What is important is to design, experiment, adapt, implement and, eventually, scale up a well-defined strategy. In terms of educational technologies the focus must shift from a short-term policy that simply hands out computers, laptops and tablets to students, to a policy that links access to equipment with strategies for guided use, with specific content according to level and subject matter, and with clear goals based on measurable learning indicators.

VI. A Relevant Education

In addition to the known problem of substandard quality, as reflected in poor results on academic tests, education systems in Latin America face challenges related to study programs' lack of relevance, a circumstance that affects the ability of graduates to manoeuvre in a complex and increasingly globalized world. Latin American youths not only have difficulty performing in areas such as math and language, but also in less traditional cognitive (such as analytical capabilities or problem-solving), technical and socioemotional capabilities. This challenge is most starkly reflected in the high number of dropouts at the secondary and tertiary levels, and the uneven returns from higher education. These phenomena stem in part from problems with education's relevance both for the students themselves and for the labor market.

The challenge

The shortcomings in the academic training of students reflect the poor linkage between secondary and post-secondary education and the labor market, and have an impact on the job opportunities for youths (International Labour Organization, 2013). Employers in the region have problems finding qualified workers for their business operations, given the weaknesses in a range of abilities, including technical abilities,³⁵ fluency in foreign languages (see **Box 6.1**), the ability to communicate effectively and work in groups, or other socioemotional skills. Latin America is the region that has the most trouble filling vacancies for qualified jobs: employers in the region take the longest to find workers (more than six weeks on average), followed by employers in East Asia and

Box 6.1.

English Language Teaching in Latin America

The poor levels of English in the region are a constraint for both employers and workers. According to the EF English Proficiency Index, which has information on 70 countries, only one country in Latin America has a high level of English (Argentina) and another a medium level (Dominican Republic). The rest have low or very low levels. In addition, results within countries tend to be affected by the family's socioeconomic levels, which is why those that can pay for a higher level education have better results (Mexicanos Primero, 2015). Although some countries have initiatives to improve English language teaching in public schools (Chile, Colombia, Costa Rica and Ecuador), curricula based on repetition and memorization, the teachers' lack of qualifications, and the late start in teaching English make learning difficult. In 2014 Panama launched the Bilingual Panama program that focuses not only on teaching English to children and youths but also on training qualified teachers, which includes training and learning in English-speaking countries.

Sources: Fiszbein, 2015; GAMA TV, 2014; Mexicanos Primero, 2015.

the Middle East (both slightly less than five weeks), while employers in Southeast Asia take the least time (less than three weeks) (Aedo and Walker, 2012).

Since the 2000s, returns from secondary education, and in recent years from tertiary education, have declined. This springs partly from the expansion of educational coverage, which drives down the salary levels of workers with higher levels of education (Bassi et al., 2012; Montenegro and Patrinos, 2014). At the same time, the fall in returns seems also to be a consequence of the misalignment between acquired abilities and the skills demanded by the labor market (Bassi et al., 2012; OECD, United Nations and CAF, 2015). For

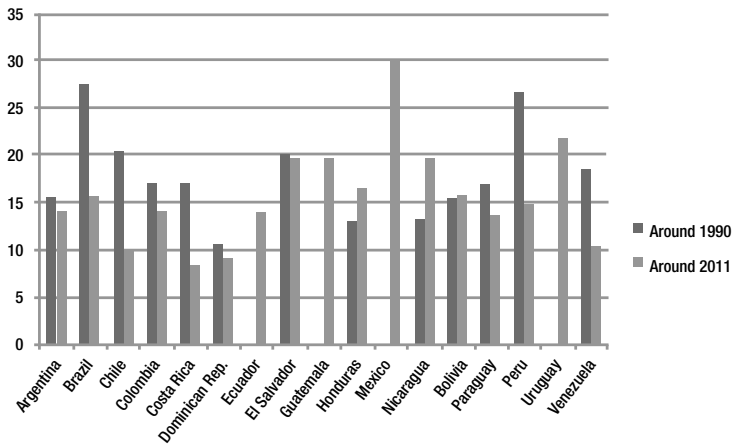
example, interviews with human resources specialists from important companies in Argentina revealed a devaluation of secondary education credentials as regards certifying knowledge and work skills (Iaies, 2011).

In these circumstances, employers have to compensate for the lack of relevance of the worker's education by offering in-work training. Some 43 percent of the region's manufacturing companies offer formal training to their employees, which entails educating about 60 percent of workers, a higher percentage than in other regions of the world³⁶ (World Bank Group, 2014). Large manufacturing companies that are the most productive and that operate in the largest economies in the region are the ones that most offer training (World Bank Group, 2014). In this context, improving the relevance of the training offered to Latin American youths in the education system can enhance not only their employability and earning capacity but also the economy's competitiveness.

The dropout rate in secondary school

Despite the significant increases in educational coverage in the last two decades (see Chapter I) the dropout rate at the secondary level is a big challenge for the region (Bassi et al., 2012; Busso, Bassi and Muñoz, 2014; International Labour Organization, 2013), and problems of relevance can partially explain this phenomenon. For example, 23 percent of youths from the classes that should have graduated from secondary school between 2012 and 2014 left school between the ages of 12 and 17 (Székely and Centro de Estudios Educativos y Sociales, 2015). **Figure 6.1** shows that there are significant variations between countries, with close to a 30 percent secondary dropout rate in Mexico and about 8 percent at the other extreme, in Costa Rica.

Figure 6.1.
Dropout Rate in Secondary School for Youths between
the Ages of 15 and 19



Source: prepared by the authors based on data from ECLAC (2012) and ILO (2013).

The reasons for the dropout rate are diverse. Economic reasons often drive young people to leave school early. The schools’ and teachers’ lack of preparation in offering support to youths from vulnerable contexts is another (Bassi et al., 2012). The region has been characterized by its high number of “NEETs”—young people who are not in employment, education or training. About 20 million young people between the ages of 15 and 24 are in this situation, most of them women (de Hoyos, Rogers and Székely, 2016). Some 20.3 percent of young people neither study nor work, in contrast with the average 15.8 percent among OECD countries (International Labour Office and International Labour Organisation, 2013). “NEETs” are more related with dropping out of school than with leaving the labor market (Cárdenas, de Hoyos and Székely, 2014).³⁷

At the same time, education's lack of relevance also contributes to dropout rates. The main reason why youths between the ages of 13 and 15 drop out is lack of interest (BID Graduate XXI, n.d.). A survey in Brazil suggests that the lack of interest on the part of young people is one of the main reasons for the dropout rate in the country (Bassi et al., 2012). Seven of the eight Latin American countries that participated in PISA 2012 have dropout rates higher than the OECD average, and five also have higher rates of unpunctuality, indicators that the OECD consider to be signs of low student commitment, and which might reflect the difficulties that the education systems encounter when trying to engage secondary school students. Policies such as establishing nine years of compulsory education (and 12 in some countries), and conditional transfer programs, helped lift student attendance and retention rates (Bassi et al., 2012; Fiszbein and Schady, 2009). However, the transfer programs only deal with economically motivated dropouts. The lack of interest among youths demands actions to improve the relevance of curricula and training programs.

The inadequate expansion of tertiary education

Tertiary education, too, has not been devoid of difficulties. The rapid expansion of education—from 10.4 million to 23 million students between 2000 and 2013—has not necessarily led to improved educational or job outcomes for youths.

Enrollment rates are barely above 40 percent, except in some countries (Argentina, Chile, Uruguay and Venezuela) that are at OECD levels (see **Table 6.1**). There was also an increase and diversification of tertiary education institutions, including universities, professional institutes, polytechnics, and vocational schools,³⁸ but this expansion has not always

been accompanied by improvements in quality and relevance at this level.

Table 6.1.
Gross Enrollment Rate in Tertiary Education

Country	2000	Last available year (around 2013)
Argentina	53.1	80.0
Chile	37.2	83.8
Colombia	23.2	51.3
Costa Rica	26.6	53.0
Ecuador	–	40.5
El Salvador	21.6	29.2
Guatemala	–	18.3
Honduras	13.8	21.2
Mexico	19.1	29.2
Panama	41.3	38.7
Paraguay	16.0	34.5
Peru	34.6	42.8
Uruguay	34.3	63.2
Venezuela	28.5	77.9
Latin America	22.8	43.9
OECD	–	71.0

Source: UNESCO Institute for Statistics and ECLAC (2015).

Note: the gross rates are estimated as a percentage of the population between the ages of 18 and 24.

There are also indications of problems in the external efficiency of the system, as reflected in the above-mentioned fall in returns. A more detailed look reveals significant differences in the sector, which suggest that there are quality and relevance problems. In Colombia, 30 percent of university graduates and 59 percent of graduates from technical and technological programs show net negative returns, and in Chile these numbers reach 22 percent and 51 percent, respec-

tively (González-Velosa et al., 2015). There are also disparate results for graduates from the same profession depending on the institution: in Colombia, accounting graduates have net positive or negative returns depending on the higher education institution from which they graduate, and with little difference between a university degree and a technical one.

These results suggest differences in the systems that monitor quality,³⁹ and they point to problems in the make-up of supply. As regards quality, the quality control systems in the region are based heavily on data on inputs and processes rather than on results and impact, and the certification procedures do not consider the relevance of education for the countries' productive development. This partly explains the enrollment and graduation figures, with high rates of student enrollment and graduation in areas of study such as social sciences, business and law, and a small number of graduates in disciplines such as engineering. In Argentina, for example, one engineer graduates from university for every 6,700 inhabitants, in Brazil, one for every 6,000, and in Chile, one for every 4,500. The corresponding ratio is one for every 2,000 in China and one for every 2,300 in Germany and France (Ministerio de Educación de la Nación, 2012). This suggests that the region is experiencing an incomplete process of tertiary education expansion, in which deficiencies in regulating supply, together with the lack of preparation of young people to enroll in these disciplines and possibly the limited capability of individuals to make well informed decisions, prevent the expansion from leading to better labor outcomes.

Tertiary education also has serious internal efficiency problems, as reflected in high dropout rates. In countries like Brazil and Chile these rates are between 40 and 50 percent

of students, and in Argentina they reach 70 percent, while in developed countries dropout rates are between 20 and 30 percent (Centro de Estudios de la Educación Argentina, 2014). In 2012, only about 10 percent of youth between the ages of 25 and 29 had completed tertiary education in the region (ECLAC, 2014). This has a direct effect on youths' labor prospects, given that private returns from incomplete tertiary education are low and similar to those for youths who only graduated from secondary school.

How can relevance be improved?

The problems with dropout rates at both secondary and tertiary levels, the high percentage of inactive youths who do not continue their studies, and the increasing supply of tertiary programs that do not guarantee employability or better salaries prompt a question about education's relevance for the personal and professional development of young graduates.

Latin American countries face the challenge of transcending the strongly academic orientation of their systems of secondary and tertiary education in search of mechanisms that promote the development of “twenty-first century skills” and foster a linkage among the different levels of education (secondary and tertiary in this case) and the labor market, so as to promote the development of technical skills relevant to the job market.

Skills for the twenty-first century

The transformations that have taken place in the world of production and communication in recent decades demand new skills. The “skills for the twenty-first century” involve cognitive matters (critical thinking, ability to analyze, problem-

solving) that transcend the traditional frameworks in which the region's education systems have been grounded, and also non-cognitive and socioemotional matters. The development of these skills is strongly related to the development of modern jobs. While in the United States the jobs that require non-routine interpersonal and cognitive skills expanded greatly (Autor, Levy and Murnane, 2002), in Latin America this has not happened, in part because education systems do not instill these skills in their graduates (Aedo and Walker, 2012).

The region's education systems mainly focused on academic knowledge, which prioritizes content assimilation over processing or integration of the acquired knowledge. According to PISA results, the countries in the region have deficient results in critical thinking. In an average OECD country, 12 percent of the students achieve the highest results for the test, which requires the use of critical thinking and proofs in science, math and reading, while in Chile and Uruguay (the countries with the best results in the region) less than 2 percent score at this level (Bos, Ganimian, and Vegas, 2014e).

In order to foster non-traditional cognitive skills, education systems must focus on thought processes rather than on thought products (National Research Council, U.S., et al., 2012). Learning based on carrying out projects and solving problems related to new and complex material can foster the development of these skills. The examples of Singapore and Japan, the countries with the best average scores in PISA's section on problem-solving, together with South Korea, offer two different perspectives of how to include the development of non-traditional cognitive skills in the formal education system (OECD, 2014b). In Singapore, the curriculum and assessments were revised in 1997 to give greater prominence to higher-order thinking skills and problem-solving. The in-

clusion of these types of skills is done independently in each of the disciplines (science, social science and math). For example, the science curriculum is based on scientific research, which allows students to be involved in a scientific problem, collect and interpret evidence, and draw conclusions. In social sciences, the aim is to encourage a critical mindset, which involves the review of evidence to support arguments, while in math the students are required to apply math models to real situations. In Japan, meanwhile, a curriculum reform in the 1990s reduced the content and provided room to deepen learning. This reform put in place a new course called integrated learning, based on projects geared to an understanding of complex problems, such as social welfare, health and environmental or international problems. The course aims to encourage experimentation and observation as a means for students to discover multiple solutions to problems with different perspectives.

Another relevant element to promote non-traditional cognitive skills in the education system is their inclusion in assessments.⁴⁰ At the international level, the PISA results on problem-solving point in this direction. PISA assesses three dimensions: ability to identify the nature of the problem, the process of resolving the problem, and the context of the problem posed.

At the country level, since 2007 Japan has developed a national assessment for students in sixth and ninth grades that focuses on measuring the student's ability to apply the knowledge learned to real situations (OECD, 2014b).

The education systems can also promote the development of the student's socioemotional skills (see **Box 6.2**), especially in three respects: working with others, handling emotions, and

achieving goals (OECD, 2015c). Countries like Brazil, Chile and Mexico generally include the development of socioemotional skills in the broad goals of the education system and in curricular frameworks. Only Chile (in the broad goals and in the curricular framework) and Mexico (in the curricular framework) deal with the three dimensions mentioned.

Programs to promote the development of socioemotional skills at school have had positive results in OECD countries (OECD, 2015c).⁴¹ Socioemotional education has had positive effects on behavioral and emotional problems, and improved academic performance. The programs with the best results are those applied sequentially (according to the children's age), require the active participation of students, focus on the development of socioemotional skills within the academic curricula, and explicitly develop specific socioemotional skills (Dusenbury et al., 2015; Payton et al., 2008). Teacher training and selection can also play a positive role when they include socioemotional abilities (see Chapter III).

The development of these skills must begin at infancy. As explained in Chapter II, in the early years (ages zero to five) the development of socioemotional skills can take place in nurseries and daycare centers, but must be complemented with interventions at home and in the community, with a view to reducing parents' stress through parental visits and lessening children's exposure to insecure environments. For children enrolled at school, possible interventions include teacher training in these skills so as to help them become models in the classroom, activities that improve the classroom environment, courses on socioemotional skills, teaching practices that include the learning of socioemotional skills in their methodology, and programs outside the school timetable (Guerra et al., 2014).

Systems such as the Montessori model, which allow students to collaborate with each other and give them the freedom to explore subjects that interest them, promote favorable attitudes of self-motivation and compliance with rules. Escuela Nueva, an educational project developed in Colombia for rural primary schools with a multigrade model, is another good example.

Box 6.2.
Socioemotional Skills

Socioemotional skills refer to personal attributes that are not measured by means of knowledge tests or the intelligence quotient (Kautz, Heckman, Diris, Weel and Borghans, 2014). They include intrapersonal and interpersonal skills (Hagen, 2013).

Group of skills		Attributes
Intrapersonal	Intellectual openness	Flexibility, adaptability, social and personal responsibility, continuous learning, intellectual interest, curiosity
	Work ethic/ Responsibility	Initiative, responsibility, perseverance, professionalism, determination
	Self-esteem	Self-monitoring, self evaluation, psychological and physical health
Interpersonal	Teamwork and collaboration	Communication, collaboration, teamwork, cooperation, empathy, dispute settlement
	Leadership	Leadership, responsibility, assertive communication, self-presentation

Source: adapted from the National Research Council (2012).

It has been shown that socioemotional skills are associated with people’s educational, social or economic results and are valued in the labor market (Heckman and Kautz, 2012). For example, in New Zealand the students that were most perseverant and responsible when they were eight years old experienced lower levels of violence and drug, tobacco and alcohol consumption at 16 (OECD, 2015). In Bolivia, people who are employed or

(It continues)

Box 6.2.

Socioemotional Skills

(continued)

active demonstrate higher levels of openness to new experiences and greater degrees of perseverance than those who are inactive (Valerio et al., 2014). In Argentina and Chile, socioemotional skills are associated with job stability and better salaries (Bassi et al., 2012).

Although there are no large-scale assessments of the state of socioemotional skills in Latin America, several surveys show that the employers in the region cannot fill vacancies, in large part because of a lack of these skills. In Mexico, employers indicate that they are willing to pay more for an employee who has skills such as decision-making, negotiating capacity, dispute settlement, responsibility, innovation, ability to relate to clients and punctuality (CIDAC, 2014).

Escuela Nueva encourages the participation and involvement of students in the learning process, based on a curriculum that provides incentives to apply what has been learned to the context in which the students live, with positive results not only at the traditional learning levels but also in socioemotional respects (Psacharopoulos, Rojas and Velez, 1992). An adaptation of Escuela Nueva to the urban context (Escuela Activa Urbana in Manizales, Colombia) promotes a less hierarchical educational model that encourages student participation and the settlement of disputes in the classrooms. The schools that follow this model have better scores in standardized tests and higher levels of citizenship skills (Puryear, Barrera-Osorio and Cortelezzi, 2014).

Experiences in the United States with initiatives geared to changing students' attitudes in matters such as time management, feelings about learning, self-control and persistence (Farrington et al., 2012) tend to use subtle incentives to motivate

“strength of character.”⁴² A simple change such as making it possible for students to choose courses that they are interested in helps promote their intrinsic motivation (King and Rogers, 2014). The character reports,⁴³ in which the teachers grade their students’ progress in the development of non-cognitive skills such as enthusiasm, self-control or curiosity, are another example of these incentives, as they introduce this subject among teachers, parents and students (Ganimian, 2014).

Finally, one of the most important aspects of introducing socioemotional skills in schools is the ability to measure how they develop in children and adolescents. This can be done using personality and behavior questionnaires, the main challenge being adaptation of existing questionnaires to reflect the cultural circumstances of each country (OECD, 2015c).⁴⁴

A good example is the Ayrton Senna Institute which, in collaboration with the OECD and Rio de Janeiro’s education department, developed an instrument to measure socioemotional skills and applied it on a large scale to the schools in the State of Rio de Janeiro (Santos and Primi, 2014). This initiative seeks to monitor such skills in order to help create intervention and development strategies that will improve them.

A matter that is complementary to the development of skills for the twenty-first century is the development of citizenship skills. These include categories such as civic principles and values; identity, plurality and diversity; coexistence and peace. According to an evaluation by the Sistema Regional de Evaluación y Desarrollo de Competencias Ciudadanas (SREDECC), since 2000 traditional civics education in Latin America has broadened its focus, sequencing and purpose, and is included in curricula as citizenship education (see **Table 6.2**). First, the focus of the content has broadened from

Table 6.2.
Curriculum Organization and Subjects in Citizenship Education

Country	Main subjects					
	Curriculum framework	Study program	Civics	History or social sciences, or both	Other subjects	Crosscutting (through the curriculum)
Colombia*	✓			✓ – Basic standard of skills for social sciences		✓ – Basic standards of general and specific citizenship skills
Chile*	✓	✓		✓ – Study and understanding of society – History of social sciences	✓ – Philosophy and psychology – Orientation	✓ – Fundamental crosscutting goals
Guatemala*		✓	✓ – Education for citizenship	✓ – Social sciences – Social sciences and education for citizenship	✓ – Social and natural environment – Natural sciences and technology – Productivity and development	
Mexico*		✓	✓ – Civic and ethical education	✓ – Study of the place where I live – History – Geography	✓ – Exploring nature and society – Natural science	
Paraguay*		✓	✓ – Ethical and citizenship education	✓ – Social sciences – History and geography	✓ – Social life and work	
Dominican Republic*		✓	✓ – Moral and civic education	✓ – Social sciences		✓ – Crosscutting axes of democracy and citizenship

Source: prepared by the authors on the basis of Cox (2010) and UNESCO-OREALC (2013).

(*) For the six countries, except Chile, the curricula examined in this report were current in 2012 (UNESCO-OREALC, 2013). For Chile, the curriculum analyzed corresponds to the curriculum framework approved in 1998 and valid up to 2009.

the political institutional set-up (nation, state, government, law), to social, moral and environmental issues. Second, citizenship education is now present in all grades rather than simply at the end (final grades of middle school) as it was before. Moreover, it is offered through different areas of the curriculum and not as a single subject. Third, there has been a broadening of education related to the adoption of learning goals geared to the acquisition of knowledge, skills and attitudes in practical contexts with predominantly participatory and democratic relations (Cox et al., 2014).

Research has shown that the training teachers receive to develop citizenship education is a key element for the quality and effectiveness of the education process. Another matter that has been underscored is the positive effect of an education process planned and executed in alignment with the goals of the curriculum, as well as fostering an environment within the classroom that is open to student participation through democratic interactions. In this sense, the teaching staff represents the most decisive and transcendent link in the implementation of citizenship education in schools (OREALC/UNESCO, 2016).

Technical skills

Technical skills are the applied knowledge and practices that allow us to carry out specific tasks within a working environment. They combine cognitive and non-cognitive elements (Margolis, 2011; Valerio et al., 2014). The latter are the basis for the effective development of technical skills. The education system's role in vocational and work training is very much influenced by the way in which it connects with the labor market, a connection that is quite weak in Latin America.

It is a matter of debate whether technical skills should be developed in secondary or just tertiary education. Evidence on rates of return is ambiguous in that regard. In the past decade, private rates of return for techno-vocational education (TVE) have grown relative to returns for general secondary education in all countries of the region except Argentina and Venezuela. Today they exceed returns for general secondary education by about 20 percent in Chile, Colombia, Mexico, Nicaragua, Paraguay and Peru, but not in Argentina, Honduras, Uruguay or Venezuela (Székely and Centro de Estudios Educativos y Sociales, 2015). Given the lack of detailed studies on costs, it is difficult to speculate on the rates of return relative to public investment in both varieties of secondary education.⁴⁵

In Latin America, secondary school in many cases is the final education level of young people, and thus it is inevitable that attention is paid to how secondary school can help prepare them for work. Traditionally, the approach has been to establish a TVE branch as a counterpart to the academic one. Although most countries have this type of arrangement, in general young people have not graduated with the necessary qualifications for work.

The TVE systems were developed hand in hand with import substitution models at a historic moment when there was demand for a workforce specialized in very specific trades and skills. In the beginning these schools were the answer to the demand for a skilled workforce, but as time went by their development came to a halt and they lost their efficiency. The region thus requires a reform of TVE that will develop modern technical skills in high demand in the local labor market,⁴⁶ at the same time as it strengthens academic education (so that graduates can choose to continue with their

studies if they wish) and improves training in non-traditional cognitive and socioemotional skills.

It is essential to connect TVE with the demands of the labor market; this requires that the education system work more closely with employers, so as to identify the needs of the local labor market, and then adapt and develop curricula for technical training. One way of doing it is by establishing regular or permanent boards or working groups that include representatives of different business groups and unions to ascertain employers' needs (see **Box 6.3** on Costa Rica) in order to include them in the curricula and the development of new programs. Another way of connecting the education system with the labor market is by signing agreements directly between schools and businesses, as happens in Chile, where the Construction Chamber sponsors technical schools that teach specializations related to the sector. The dual TVE blueprints that combine classes at school with workplace apprenticeships⁴⁷ or internships are other options to encourage this connection.

Strengthening the channels of communication with the labor market is even more important at the tertiary level. One way of doing this is to organize working groups between representatives of universities and business associations to gather information and adapt the curricula to the needs of the labor market. Through the Tuning Project in Latin America, for example, 120 universities from the region, together with employers, defined the necessary skills for eight professional degrees (Thorn and Soo, 2006). Another way of connecting education with the professional arena is through internships during education as a requirement for both technical and professional degrees.

Solving the quality and relevance problems in tertiary education also requires more effective regulatory mechanisms

Box 6.3.

Secondary Technical Education in Costa Rica

Starting in 2006, Costa Rica's technical education system was modernized towards skills-based training that refreshed the study programs and specializations of technical education, as well as trained teachers and upgraded the infrastructure in the schools that taught the skills. This was matched by an effort to increase coverage, especially in rural areas and in marginal urban communities, which led to increased participation in this type of education: from 18 percent in 2004 to 26 percent in 2014. In order to strengthen the relationship between schools and the labor market, business roundtables were organized with representatives of the education and business sectors, to determine the latter's needs. Regional Councils for Relations between Business and the Community were in charge of using the information from the roundtables to update the curricula and specializations, and for modifying the profiles of graduates.

Graduates from technical education in Costa Rica receive the degree of mid-level technician in line with the chosen specialization, and receive the high school diploma—similar to that of graduates from the general education track—that allows them to continue with tertiary education. Technical education involves an additional year of studies and includes an internship in the area of specialization.

Source: Garnier (2016).

(for both public and private institutions) than those currently in place. The latter are based on accreditation, with great emphasis on the assessment of inputs such as teachers' level of education, infrastructure, the consistency of the education project, financial solvency, and others (González-Velosa et al., 2015). It seems essential that quality control systems include direct assessments of the learning standards of graduates, defined as a function of the skills required by the labor market, following the example of the SABER PRO test in Colom-

bia, the Examen Nacional de Desempenho de Estudantes (ENADE) in Brazil, and the Examen Nacional de Egreso de Licenciatura (CENEVAL) in Mexico (Fiszbein, 2015).

Measures of learning standards are not the only results that can be included in assessment systems. Information on graduates' professional achievements (especially jobs and income) has been missing from quality control systems and its inclusion can provide important information. The publication of this information is valuable as a means of offering a more transparent overview for the decision-making of teaching institutions, policymakers and system administrators, and, of course, students.

Both Chile and Colombia have introduced publicly available information systems on higher education graduates. The website Graduados Colombia⁴⁸ uses administrative databases from the Labor Monitoring Center on the results of those leaving higher education. The website includes information on average income and the rate of formality for each grade, specialization and institution. Similarly, the website Mi Futuro⁴⁹ in Chile provides information on degrees and institutions to help guide young people in decisions about their studies. There they can access information on costs, dropout rates, effective duration of degrees, employment rates and salaries for each degree and institution. Information on income and employability comes from the higher education institutions and from cross-referring with data from the tax system.

Finally, the region's education systems have not included incentives to match the tertiary programs on offer with the labor market's needs. Policies that allocate public resources to institutions did not take account of the relevance of the programs for the labor market or their rate of return (González-

Velosa et al., 2015). The inclusion of employment and income results for graduates, as a criterion for resource allocation, is one way of regulating the supply of tertiary programs in line with their relevance to the labor market. At the same time, it is possible to encourage students to choose programs in areas that are important for the country by offering scholarships to those that lean towards such disciplines.⁵⁰

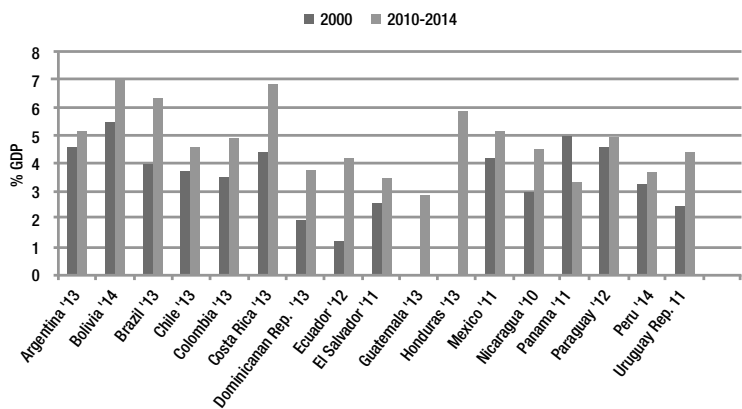
Final remarks

The education system at the secondary and tertiary level must adapt to the needs of the modern world, and this requires broadening the perspective of what constitutes quality education, stressing the relevance of the learning acquired and the skills developed. The challenge rests, then, in placing greater emphasis on twenty-first century skills in secondary education and modernizing technical education and vocational training programs so that they respond to the demands of the labor market. This will be difficult to achieve without closer and more systematic ties between the education system and employers, and without placing greater emphasis on assessing results and acquired skills.

VII. Financing for Results

Efforts to improve the quality of education must unfold within a financing scheme that is fiscally and socially sustainable. Latin American societies are demonstrating their growing interest in education by investing more financial resources. Over the past decade, public investment in education has increased greatly. Today it accounts on average for 4.8 percent of GDP (see **Figure 7.1**) and 16.9 percent of the public budget. In comparison, the average in OECD countries is 4.8 percent of GDP and 11.6 percent of the total public budget (OECD, 2015d). Although there are still significant differences between countries, it can be said that education is no longer the “Cinderella” of resource allocation in budgetary terms.

Figure 7.1.
The Growth of Public Investment in Education



Source: UNESCO (UIS) and World Bank (EdStats), January 2016.

The increase in public resources devoted to education was matched by efforts to expand compensatory programs and improve opportunities for students from vulnerable

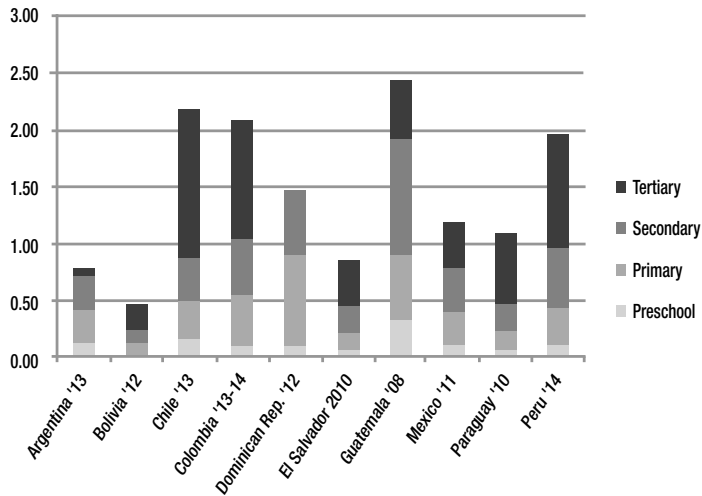
households. These efforts included scholarship programs and cash transfers, as well as the allocation of specific resources to finance activities in schools with a high concentration of students from lower-income homes.

The need to gradually increase the resources allocated to education has led several countries to establish budgetary targets by law. The Dominican Republic, one of the countries that until recently had the lowest public expenditure on education, set a goal of 4 percent of GDP. The Ten-Year Education Plan in Ecuador and the Law on Education Financing in Argentina set goals of 6 percent of GDP, a share that seems to have become a reference point for many countries. Costa Rica amended an article in its constitution and established a goal of 8 percent of GDP for public expenditure on education. In 2014 the Brazilian Congress approved a National Education Plan that comprises 20 education targets, including an increase in public expenditure on education over a period of 10 years, from the current 6.3 percent of GDP to 10 percent.

Although on a much smaller scale than in other regions of the world (Asia in particular), families are also investing significant resources in their children's education. Private spending on education accounts on average for 1.5 percent of GDP (see **Figure 7.2**); the figure is higher in countries where the public sector invests less. Although in most countries private spending tends to be concentrated in higher education, in countries like Guatemala and the Dominican Republic, where fiscal resources for education represent a relatively small percentage of GDP, families allocate a greater proportion of their income to financing primary and secondary education.

Unlike what happens in the health sector or with pensions, demographic trends play a role that favors fiscal sustainability

Figure 7.2.
Private Spending on Education



Source: UIS database (December 2015). Corresponds to household expenditure.
 Note: in the case of the Dominican Republic, excludes spending on tertiary education.

in the education sector, given that coverage rates are high and the progressive aging of the population drives down the demand for resources as a percentage GDP. This means that, in the long term, Latin America could progressively increase both coverage and the amount spent per student with the current level of fiscal resources. For example, by 2050 it could reach, on average, OECD levels of coverage and expenditure per student, by allocating to education a percentage of GDP similar to the current one (Miller et al., 2011).

In the shorter term, and given the increasing fiscal resources already allocated to education and the less benign macroeconomic context (Werner, 2016, ECLAC, 2015) than during the previous decade, it is important to raise the question of the costs of quality improvements and consider the implications for the financial sustainability of education systems.

At the regional level and in the context of the 2021 Educational Goals for Ibero-America, ECLAC and the OEI (2010) estimated the costs of improving the coverage and quality of education. The study found that universalization of basic primary and secondary education could be achieved by 2021 with annual budgetary savings in the order of 0.5 percent of GDP, given the existing high rates of coverage and current demographic trends. The widespread expansion of higher secondary education to coverage levels close to 80 percent would require additional resources of close to 0.1 percent of GDP. Similarly, the additional costs of expanding training and professional development programs for teachers, and of equipping schools with computers, do not significantly alter the fiscal balance. Given the low coverage rates of early education programs, achieving the proposed goals would have significant incremental costs. The ECLAC/OEI study estimated that the goals could involve an additional cost of 0.75 percent of GDP on average. In their projection, early education would require more than 70 percent of the additional resources in order to reach the established goals. The same study estimated that a gradual increase in public expenditure on education no greater than 0.1 percent of GDP per year would be sufficient to finance the proposed goals for 2021, except in Bolivia, Honduras and Nicaragua.

Although these estimates offer a useful baseline, however, they underestimate the financing pressures faced by the region's education systems. The financing of higher education is probably the most controversial matter in a sustainability analysis. The ECLAC/OEI study did not consider the costs of expanding coverage of tertiary education (university and non-university), although it included a resource increase of 0.3 percent of GDP in higher education for research and

development, as well as scholarships for students from indigenous communities and those of African descent.

As shown in Chapters I and VI, the demand for tertiary education has grown sustainably. Given the increasing coverage rates in secondary education, this trend is expected to continue in the future. **Table 7.1** shows the rates of enrollment in tertiary education and public spending at that level as a percentage of GDP, and projects the fiscal cost of two coverage goals assuming that state participation in the financing of tertiary education is maintained at current levels. Under those conditions, on average, achieving a 65 percent coverage (similar to what Uruguay has today and significantly lower than what Argentina and Chile have) would require the equivalent of 0.7 percent of GDP.

Table 7.1.
The Cost of Tertiary Education

Country and year	Expenditure (% of GDP)	Enrollment (%)	Coverage target	
			50%	65%
Colombia 2013	0.87	50.1	0.90	1.10
Costa Rica 2014	1.40	47.6	1.47	1.72
Ecuador 2012	1.11	40.5	1.37	1.78
El Salvador 2011	0.29	27.6	0.53	0.68
Guatemala 2013	0.35	18.3	0.96	1.24
Honduras 2014	0.99	21.2	2.33	3.04
Mexico 2011	0.93	27.0	1.72	2.24
Panama 2012	0.74	43.9	0.84	1.09
Paraguay 2012	1.11	34.5	1.61	2.09
Peru 2014	0.52	42.8	0.61	0.79
Uruguay 2011	1.17	63.2	1.17	1.22

Source: UNESCO (UIS).

Clearly, the cost of this expansion will depend on the financing blueprint adopted. A model in which coverage

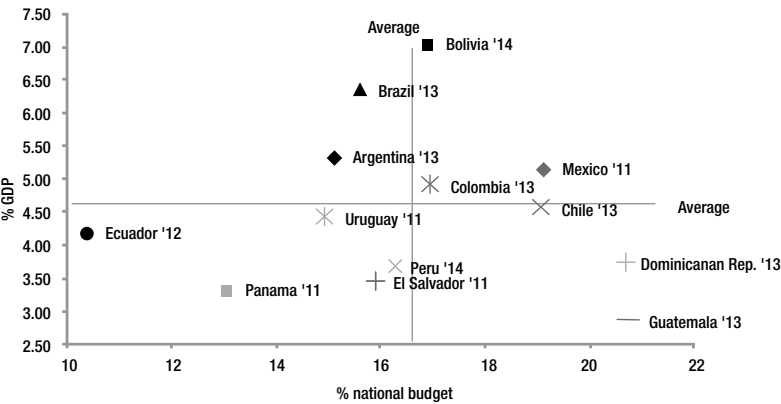
expansion relies 100 percent on public financing will require significant increases in the education budget and, in many cases, will challenge the financial sustainability of the system as a whole. For this reason, blueprints for shared financing that involve a mix of fees in public institutions, subsidies in private institutions and loans are a natural response, especially considering the growing role of private institutions in providing services in higher education (Brunner, 2013). At the same time, in those countries in which families are already funding an important part of the costs of tertiary education, the expansion of enrollment towards socioeconomic sectors with fewer resources will certainly require greater public contributions. The Chilean case offers a clear illustration of the pressure the education system is under: the annual cost of the proposal for free secondary education is estimated at between 0.6 percent and 1.2 percent of GDP (Salas et al., 2015).

The ECLAC/OEI estimates can also be said to underestimate the costs of the efforts required to achieve teaching excellence.⁵¹ In Colombia, for example, the proposal of the Fundación Compartir (2014) to improve the quality of teaching includes five elements: (1) preservice training; (2) promotion and recognition of teachers; (3) in-service assessment and training; (4) pay and bonuses; and (5) voluntary early retirement plan. The total cost of this program amounts to 0.3 percent of GDP, 1.7 percent of the central government budget, 9 percent of the budget of the education ministry and 14 percent of the budget of the general system of contributions. In Chile, the new law for the teaching degree entails additional costs equivalent to 0.8 percent of GDP.

What fiscal space is there to increase the resources devoted to education? (See **Figure 7.3**). In countries with relatively

low budgetary allocations (for example, lower than the regional average), giving the sector higher priority in resource allocation could lay the groundwork for funding the necessary additional investment. Nonetheless, when the sector already receives a percentage close to 20 percent of the national budget, that option is hard to implement without an increase in tax resources, as in Chile. Finally, in countries (such as Argentina, Brazil or Bolivia) that allocate a percentage close to or greater than 6 percent of GDP to education, issues of fiscal space have to be dealt with very carefully.

Figure 7.3.
Fiscal Space and Education Expenditure



Source: UNESCO (UIS), January 2016.

Although there is still some margin to expand education budgets in some countries, considering the less positive economic and fiscal environment that the region is facing, in general terms over the coming years education systems will have to be more efficient in the allocation and use of resources. Improvements in the efficiency of allocation and use will be essential in order to guarantee the sustainability of efforts to improve the quality of education.

The key question is how much inefficiency exists in public systems today and, consequently, how much space is there to generate savings that can be channeled to more productive uses for educational gain?

A recent statistical analysis from the IMF (Grigoli, 2014), using data for the period 2000–2010 in 89 developing or transition countries, found that, on average, efficiency improvements (understood as moving towards the boundary of what a country can achieve given its income level and social characteristics) would allow coverage increases in secondary school of 23 for every 100 enrolled students. Several countries in Latin America (Ecuador, El Salvador, Guatemala, Nicaragua and Paraguay) showed above-average inefficiency levels, while Mexico and Panama exhibited levels similar to the average. In a similar estimate, Alvarez and St. Aubyn (2012) found that Latin American education systems have lower efficiency levels than those in Europe and Asia and that, on average, the countries of the region achieve just 87.6 percent of the coverage and learning results that they could reach if they were at the efficiency boundary set by the most efficient countries. In other words, there seem to be quite significant margins to increase efficiency in resource use.

Statistical studies at the national level also find significant inefficiency margins. In the case of Argentina, Epele et al. (2013) found that, on average, subnational jurisdictions waste between 25 percent and 30 percent of the real expenditure per student in primary education to achieve the results observed in the repetition rate and the results of the learning tests in math and language.⁵² In Brazil, Boueri et al. (2014) not only find inefficiency in the system, but also some negative correlation between state spending on education per capita and the relative efficiency of the federal states in achieving educational

successes. This suggests that, given the low efficiency conditions under which they operate, it is possible that there is a limit on education expenditure per capita above which the return on additional resources is low or nil.

More detailed studies at the national level identify with greater precision the sources and magnitude of these inefficiencies. In Mexico (see **Box 7.1**), for example, the estimated waste is equivalent to 5.3 percent of the total, with marked

Box 7.1.

Illegal payments in Mexico

The Report on the Results of the Higher Audit of the Public Account for the 2010 fiscal year attributed a series of irregularities to various agencies of the federal public administration and of federal bodies in the management, allocation and use of resources from the Fund of Contributions to Basic Education (FAEB). The main observations were:

- Unwarranted payments to workers affiliated to the union with a salary.
- Resources allocated to operational expenses or items unrelated to the funds' objectives.
- Payments past the starting date of a separation period or for unpaid leave.
- Resources allocated to the payment of compensation to employees commissioned to the state union or departments unrelated to the executing agency for the resource.
- Resources to cover payment to workers affiliated to work centers that cannot be financed by the fund.
- Payments to personnel holding elective office during the same period that they received payment with resources from the fund.

Source: Mexicanos Primero (2013b).

differences between states: in Puebla it accounts for 1.8 percent of total spending and in Zacatecas for 19 percent of the total.

Spending on salaries is the largest item on education budgets and thus it is not surprising that many of the efficiency analyses focus on human resources. High levels of absenteeism are a critical factor in many countries of the region, and a significant source of waste. For example, in the City of Buenos Aires—perhaps one of the jurisdictions with the highest per capita income in the region—about one in 10 teachers is absent on average, a third of sick days are suspiciously requested on Mondays, and 40 percent of three-day absences are concentrated on Thursday and Fridays (Montoya, 2014). The educational cost of this absenteeism is high: every 10 absences reduce the students' average performance in mathematics by the equivalent measure of the difference between having a novice teacher and one with more experience. The financial costs are also high: the stipends for substitutes and the associated administrative costs are close to US\$4 billion a year. A decline in the use of leave to levels evident in developed countries would allow for an increase in all teachers' salary by an amount equivalent to the salary of a teacher with a degree and 10 years of experience.

The inefficiency in the use of human resources is still present in an education system like Chile's, which is regarded as probably the best run system in the region. In a study for archetypal municipalities, Amaya et al. (2015) estimated that the number of paid teaching hours could be reduced by between 25 percent and 47 percent. Similarly, the number of classes could be reduced by between 13 percent and 14 percent. This excess employment in municipal schools is partly because of the loss of students as a result of migration to private schools and demographic changes (Elacqua et al.,

2008). But it is not the only reason: between 2007 and 2014 the student enrollment fees for public schools were reduced by 22 percent, while the number of teachers increased by 22 percent and the number of assistants increased by 65 percent (Centro de Estudios MINEDUC, 2015).

Given the general context of public budgets with limited space to expand, efforts to continue widening education coverage and improving the quality of services will impose significant demands and pressure on education financing systems. If during the past decade the governments of Latin America had the opportunity to address growing demands by simply increasing levels of public spending, this option will be more difficult in the future. To continue prioritizing education and implementing the very necessary reforms to improve it, governments will have to pay attention and will have to adopt proper financing systems geared to improving results.

First, in a less lax fiscal context, it is essential to reorient resources towards urgent investments. In practice, this entails adopting cost-related efficiency criteria in order to decide which interventions, programs and actions should receive greatest attention for the purpose of improving standards of learning in the education system. It also implies prioritizing the allocation of resources towards programs and actions that benefit children and youths from vulnerable households, upholding the reduction of inequality as a priority goal. These general criteria must be translated into concrete options on the basis of a country's circumstances. Recognizing the diversity of situations throughout the region, the evidence points to the fact that early investment must be prioritized in the public budget more than has been the case in the past, even if it means sacrificing investments at other levels—especially at the tertiary level.

Second, it is essential to guarantee the efficient use of resources. This requires strengthening the mechanisms for controlling and eliminating waste at all levels. Given the very high percentage of public investment in education that is allocated to teachers' salaries, efficiency in human-resource management becomes extremely important. Reducing teacher absenteeism and rationalizing the workforce is, without doubt, a key challenge in many countries. The goal is not to save resources, but rather to avoid waste and enable higher rewards that will put the teaching profession at a higher ranking.

Third, financing systems can involve incentives geared to educational goals. Schemes in which the funds allocated to education include a component that rewards good results (including improvements in learning standards) are still little used in the region. These schemes can be applied to transfers between different levels of government, or in the allocation of resources to institutions providing services at the preschool, primary, secondary and tertiary levels. Similarly, it is important that efforts to improve teachers' salaries are matched by greater efforts by the teachers themselves to improve the quality of education.

Final remarks

There are still several countries in Latin America where the education sector is not sufficiently prioritized in resource allocation, which leads to a combination of underfunding and high private spending. In those countries, greater effort and public commitment to the financing of education are required. At the same time, however, efficiency in the use and allocation of resources is also a widespread challenge in the region's education systems. The need to expand coverage in early and preschool development and at the tertiary level,

as well as to emphasize programs and projects with better returns in terms of quality, will require an additional fiscal effort in some countries and greater flexibility in the allocation of resources within the education sector in all of them. This is an area in which benchmarking internationally and among subnational institutions can be extremely valuable in informing decision-making.

VIII. Towards a Social Pact for Quality Education

Latin America faces a decisive moment for the future of its education systems. The quality of the education given to the region's children and youths is deficient. The gap with learning levels in other regions that compete with Latin America in international markets is wide and growing. So too are the gaps between the region's own citizens.

Reversing this situation requires a radical and sustained change in key areas of education policy: investing more and better in childhood development, building a teaching profession of excellence, devising credible educational assessment systems that seek to improve management, exploiting new technologies to enhance the quality of teaching, making secondary and tertiary education more relevant to employment and productivity, and creating sustainable and equitable financing mechanisms. These are the Gordian knots whose unravelling would elicit the deep transformation of education that the region needs so much.

Undertaking these changes, which are so necessary for the future of Latin America, is not a simple matter. The reforms proposed in this report can provoke **disputes**, since they affect vested interests in the education system. Some countries will have no alternative but to reallocate financial resources among the different levels of the system in order to deal with priority areas (preschool education, for example) that should be expanded without delay. Boosting the efficiency of resource use demands the elimination of the kind of waste (as Chapter VII has shown) that, regrettably, benefits certain

actors inside and outside the education system. Moreover, changes in teacher hiring and assessment policies are almost always contentious and spur resistance from many unions.

At the same time, the proposed reforms are unviable without the **collaboration** of numerous actors inside and outside the system: teachers (whose efforts and commitment are crucial to attaining good results in the classroom); parents and students (who also must commit to education and learning); businesses (which should play a more active role in making education more relevant); and the press and other civil society actors (which have to raise the profile of education in society and monitor the progress made).

It is also critical to recognize that the changes proposed in this report cannot be successfully implemented from one day to the next. Most of them demand **consistency** over time and require progressive **capacity-building**. In fact, most of them transcend one government's term in office and their implementation will call for persistence. Good assessment systems, for example, are not developed in four or five years (a typical presidential term in Latin America); they require much longer periods of capacity-building. Or consider the reform of teacher training systems, which has to be maintained for a whole generation before it affects the quality of teachers in classrooms.

Moving forward with educational change for the purpose of better quality thus requires a real social pact. Let us be clear about this. It is not a matter of drafting a document that pontificates, but of building **consensus** that settles disputes and inspires collaboration among the actors involved. It is not solely a matter of reaching formal agreements, but of establishing mechanisms to ensure that those agreements will lead to **concrete actions** that are sustained over time.

A transformative triad

The social pact needed to improve the quality of education calls for action on three fronts: targets that serve as guidance and direction, leadership that is committed to the targets in order to turn ideas into realities, and mechanisms for social participation that guarantee the sustainability of these efforts.

Educational targets

To guide the administration of the system it is crucial to have clear goals: without defined and measurable objectives, and without an assessment of the extent to which they are being met, it is very hard to have positive outcomes. At the same time, devising clear goals also requires that students and their families, teachers and principals, administrators and policymakers at the national, regional and local levels commit to the attainment of the results. Defining educational targets therefore serves the dual purpose of mobilizing society and committing political leaders to educational achievement, and of fashioning an instrument that guides the management and administration of the system.

In recent years there has been a growing number of participatory experiences of setting targets at the education system level in several Latin American countries (see **Table 8.1**). Some of these are official and thus commit the state to meet the goals, while others are, for the moment, civic initiatives that have not been made official.

In general terms, the targets included in these agreements tend to focus on inputs, processes and coverage, and not so much on learning-related goals. The agreements seem to seek increases in the funding for education, a higher ranking for

Table 8.1.
Education Pacts and Targets

Country	Name	Nature	Targets			Learning
			Spending	Inputs/processes	Coverage	
Brazil	National Education Plan (2014–24)	Official	10% of GDP	All degreed teachers. 50% of teachers with postgraduate training	Universalization of early education (4 and 5 years of age); universalization of 9 years of education; 85% net enrollment rate in secondary education; universalization of basic education and specialist educational support; full-time education in 50% of schools and for 25% of students; triple enrollment in technical education; 33% increase in net university enrollment;	Eradication of illiteracy; improvement in the IDEB (in 2021); early basic 6.0; final basic 5.5; middle 5.2.
Colombia	Grand Accord for Education	Multisectoral	7% of GDP	Increase and maintenance of school facilities and infrastructure; continuous application of universal tests; strengthening of degree programs for teachers; competitive pay for teachers.	Gradual universalization of early stimulation for children 0–5; gradual implementation of full school day	All students with age-appropriate learning.
Ecuador	Ten-Year Education Plan (2006–2015)	Multisectoral	Annual 0.5% increase up to at least 6% of GDP.	Upgrading physical infrastructure and equipment in educational institutions; improving quality and equity of education and implementation of the National Assessment System (SER); greater appreciation of the teaching profession, professional development, working conditions and quality of life.	Universalization of early education from 0 to 5; Universalization of general basic education; increase in high-school enrollment up to 75% of age-appropriate children.	Eradication of illiteracy.
Guatemala	Together for Education (2013–2021)	Civic		Have competent and well-trained teachers; higher-level teacher training; recruitment that allows the best to be chosen (those who pass tests); expansion and upgrading of educational centers with provision of a school snack, school supplies, text books and materials; monitoring of test results in math and reading at all levels; Verifying the regulations of private schools.	180 actual days of classes	Students pass the math and reading tests with a minimum performance level of 'satisfactory.'
Panama	United for Education (2011–2021)	Civic	4.3% of GDP in 2016 and 5.8% in 2021.	Increasing the supply of drinking water and electricity in schools; 80% of preschool teachers to be qualified; 98.3% of pre-middle and middle school teachers to be qualified; 40% of teachers with bilingual intercultural education; increasing the number of classrooms that meet the standards to 7,726.	Universal coverage of early education (ages 4 and 5); 100% net enrollment rate in pre-middle school and 80% in middle school; school calendar of 220 class days; 6-hour class days.	Reduce the illiteracy rate in Darién and indigenous communities from 14.5% in 2016 to 4.5% in 2021.
Dominican Republic	Educational Pact (2014–30)	Multisectoral	4% of GDP	Competitions for admission to the teaching profession; certification of in-service teachers; performance assessments with merit-based incentive pay; entrance exam for teacher training programs.	Universalize the extended school day; extend coverage of early education to children below the age of 5; fulfillment of the school timetable and calendar.	n.a.

Source: official data from each country; n.a. = not available.

teaching as a profession, and higher enrollment rates. Most of them involve general calls to improve learning levels (without setting specific indicators) or simply ignore those targets. The exception in this regard is Brazil's National Education Plan, which includes specific quantitative targets for upward movement on the education quality index (IDEB), which covers learning assessment results.

If the aim of improving the quality of education and learning levels underlies all the agreements, their lack of defined targets and measurable indicators is a significant constraint on their serving as a guide to educational transformation. In that respect, the experience of world development targets is illustrative. The Millennium Development Goals did not include learning targets, but they feature prominently among the Sustainable Development Goals recently approved by the United Nations, giving rise to a significant effort to define indicators and metrics to monitor progress over time.

Apart from the number and nature of the agreed targets, it is essential to be very clear about the agencies or institutions responsible for implementing them, so as to be able to identify who is to be held accountable for meeting them. It is not enough, however, to set targets and determine responsibilities. These have to be monitored, and there must be consequences when they are not met, so as to obviate the danger that they might be forgotten or ignored. In other words, there must be responsibility and accountability mechanisms.

We can imagine a cascading monitoring scheme that is mutually reinforcing.⁵³ The national education authorities can monitor the performance of subnational agencies that are responsible for school management.

In Brazil, for example, the National Education Council monitors implementation of local-level education projects⁵⁴ and categorizes them according to a scale ranging from Preliminary (level 1) to Very Advanced (level 5). At the same time, the public management control bodies (which typically report to the legislature) assess the performance of the executive not only as regards compliance with legal stipulations but also with the agreed management plans. For example, the Court of Auditors of the Union issues special reports and also an annual report on the performance of the education system (Tribunal de Contas da União, 2015) which looks at budgetary management and at the indicators of the Multiannual Plan dictated by the constitution.

At the same time, civil society and the press have an important role to play in monitoring the state at its various levels. This can happen in connection with a specific target or a set of targets. An example of the former is the monitoring undertaken by “Empresarios por la Educación” (Business Leaders for Education) in Guatemala (Paiz, 2015) to oversee compliance with the target established in the “Together for Education” plan that seeks to ensure that children have 180 actual days of classes. An example of the latter is the monitoring of Ecuador’s Ten-Year Education Plan by a consortium of civic organizations with the permission of the government (Bellettini and Arellano, 2014).

Depending on the case at hand, the consequences of these monitoring efforts may be legal (as when the legislature assesses the executive), administrative (as when the education authorities influence the resources transferred to decentralized bodies), or political (as when civil society and the press publicize information on results).

Leadership for change

Changing education is not an automatic result of pronouncing targets and policies. The implementation of reforms typically faces bottlenecks. Shortcomings in management capacity within the education system (often the result of active and passive resistance by bureaucracies) call for strong leadership to move forward resolutely with the necessary changes.

This leadership for change must operate at three levels. The reforms proposed in this report require strong **political leadership**. A good example is that the ambitious education reform underway in Mexico was one of the pillars of the “Pact for Mexico” (Peña Nieto, Zambrano Grijalva, Díaz and Madero, 2012) signed by the three main political parties at the start of Enrique Peña Nieto’s presidential term. This high-profile, multiparty agreement sent strong signals of political leadership behind efforts for change that include matters such as: the creation of the National System for Educational Assessment; granting autonomy to the National Institute for the Assessment of Education; the introduction of the professional teaching service so that teachers and principals could be chosen through competitive competitions; creation of the Education Management and Information System; strengthening school autonomy; and gradually bringing in full-day schooling.

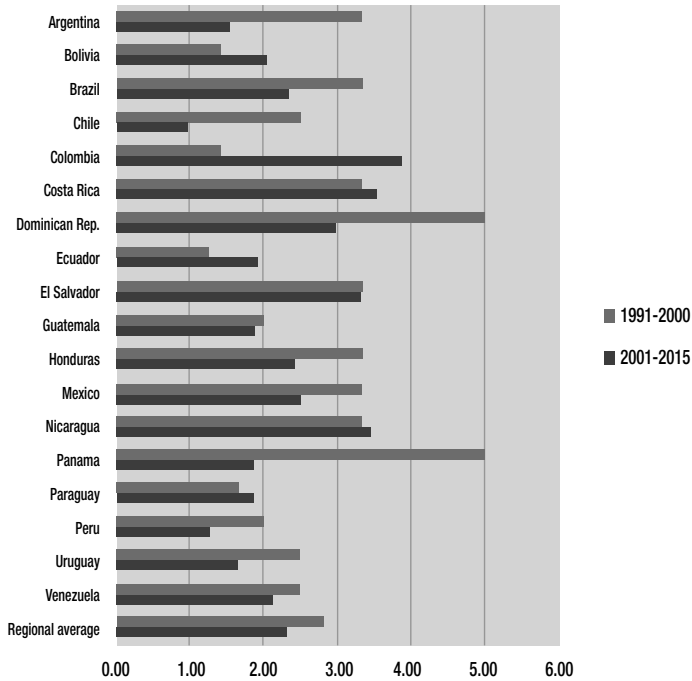
Political leadership for educational change is also expressed at the local level, where many of the key decisions are taken. Many governors and mayors not only took a reformist approach to their management in the field of education, but they also used education as a key tool of social mobilization, as in Medellín-Antioquia (Inter-American Dialogue, 2015a).

Such leadership has been evident even in circumstances marked by an absence of national-level commitment, as in Venezuela's Miranda state (Inter-American Dialogue, 2015b).

The ministers of education are crucial in implementing educational change. An important matter to be considered is the length of their time in office, not only because a short mandate hampers the implementation of reforms but also because it is an indicator of the seriousness with which the executive deals with education issues (Corrales, 2002). On average, Latin American ministers of education have lasted for 2.31 years in the past 15 years (see **Figure 8.1**). This is a decline in the average term in office compared to the 1990s. The exceptions were Bolivia, Colombia, Ecuador, El Salvador and Nicaragua, and in the past five years, Costa Rica and Peru. Chile and Brazil illustrate this trend. In Chile, in the period 1994–2006, with six-year presidential terms, there were three ministers per president. In the three later presidential terms (first Bachelet administration, Piñera and second Bachelet administration), which now are four-year terms, there were three, four and two (with half of the term still to go) ministers, respectively. In Brazil, in the period 1995–2003, there was only one minister, while in the past two years there have been four.

If political leadership is what gives impetus and consistency to the reforms, it is **administrative leadership** that proves crucial in their implementation. Given the highly decentralized character of an education system (where fundamental activities take place at the school and classroom level on the basis of decisions made by thousands of teachers, principals and administrators), even the best designed reform will fail without the necessary management capacities throughout the system. Two matters are especially critical in this regard. The

Figure 8.1.
Duration of Ministers of Education
(2001–2015 vs. 1991–2000)



Source: data 1981–2000, Corrales (2002). Data 2001–2015, authors’ research.

first is the indispensable leadership of principals in guiding change and committing teachers to the reforms. Hence the strengthening of management, as addressed in Chapter III, is a central pillar of these efforts.

The second is the professionalization of management and administrative functions in the ministries and decentralized agencies of the education system. Progress has been made in the reform of Latin American civil services, but there are still significant gaps. In the last decade, for example, the average of the Civil Service Development Index rose eight points from 30 to 38 on a scale of zero to 100 (Cortázar Velarde,

Lafuente, Sanginés, 2014). Countries like Brazil and Chile (with scores of 67 and 65) are far ahead of the others. But in the last decade there was also a marked improvement in countries such as El Salvador, Nicaragua, Panama and Peru, which used to have very low scores and now are only a little below the regional average. Three important areas of reform were the professionalization of the management sector, the establishment of effective guarantees against the politicization of public employment, and reward management.

Success in educational reform also depends on the technical soundness of both the design and implementation. This requires robust inputs in the form of rigorous evidence to underpin decision-making. In that respect, a third matter to consider is **technical leadership**, meaning the active participation of experts who advise and nourish decision-making. Chile provides a good example of such participation. The ministry of education has a studies center that, as well as conducting its own research, also fosters research through competitive funding (FONIDE) for think tanks engaged in research on education, as well as for universities.⁵⁵ Chile also has a National Education Council, made up of experts, that approves curricular bases, study plans and learning assessment schemes, and is responsible for accrediting new institutions in higher education, among other duties.⁵⁶ Institutions like this make education policies more sound and credible, which makes it easier to sustain efforts over time.

Social participation

Unless civil society is committed and takes part in the process of devising and implementing reforms, such changes might lack legitimacy and it might be hard to sustain them.

In the past decade Latin America has experienced strong growth and consolidation of citizen movements and civil society organizations working on education policy. Apart from the more traditional role of philanthropic organizations in providing funding and technical support for education programs, there has been an expansion of the type of organizations that have begun to take part in and influence the design of new education policy frameworks at the national and sub-national levels (see **Table 8.1**). In several countries, alliances of business people who are concerned about educational conditions in their countries have formed organizations to push the issue of quality education in each of them. This is the case of organizations such as Mexicanos Primero, Empresarios por la Educación (Guatemala) and EDUCA - Business Action for Education (Dominican Republic), among others.

Box 8.1.

Civic Movements for Education

In Brazil, the social movement Todos pela Educação, founded in 2006, has brought together various social actors (educators, parents, researchers, business people) around the issue of how to improve the quality of and access to basic education in Brazil. The movement has established five targets for 2022 and these are monitored annually at the national, state and municipal levels. Its action lines include keeping education on the agenda, which entails regular meetings with experts and reporters, using social networks, setting up a daily bulletin on education published by the country's main media, the distribution of recorded content for monthly broadcast by radio stations, and constant publicity campaigns on the quality of education. They also engage in work with the executive, legislative and judicial branches to align actions, projects and programs around the goals promoted by the movement (Todos Pela Educação, n.d.).

(It continues)

Box 8.1.**Civic Movements for Education***(continued)*

In 2008 an engineering professor at the University of Chile published an article in a magazine with nationwide circulation on the state of education in the country, and the massive civic response led to the foundation of Educación 2020, an organization that seeks to foster the quality and equity of Chilean education (Educación 2020, n.d.). The organization, which works on public policy proposals regarding education and reports to the public on the discussion in this field, has become a reference point in the debate on education in the country. At the same time, the mass student protests of 2011 put education on the agenda of the government and Congress, as well as in the sights of civil society. The Sebastián Piñera government reformed the financing of higher education, which entailed reducing interest rates on student loans (Bellei and Cabalin, 2013), and education reform has been one of the key issues of the present government of Michelle Bachelet.

When the question of educational quality does not loom large in political debate and government action, civil society organizations can still play a very important role in instituting an education agenda and inducing the attention of a country's political leadership. In the Dominican Republic, for example, since 2010 there has been a "4 percent for education" campaign in which more than 200 civil society organizations mobilized to pressure the government to comply with a 1997 law stipulating that spending on education must account for 4 percent of the country's GDP (Berry, 2013). In late 2012 the government announced compliance with that law and in August 2013 the president convoked the National Pact for Educational Reform.

Sources: Todos Pela Educação (n.d.); Educación 2020 (n.d.); Bellei and Cabalin (2013); Berry (2013).

In many cases the press has become an actor that creates channels for discussion of education issues, not just reporting the matter but also analyzing it. In 2008, for example, the

main newscasts in Chile devoted an average of 4 percent of their coverage to education issues (as against 13 percent for natural disasters, 13 percent for police-related news and 11 percent for politics) (Montenegro, Oyanedel and Sifri, 2008). After the mass student protests of 2011, however, the media began to pay more attention to these issues. The protests in the first half of 2013 accounted for 88 percent of the coverage of the main newscasts; most viewers believed that the right amount of time was devoted to the matter and that the information helped them understand the problem in detail (CNTV, 2013a, 2013b).

A good example of the media's role in analyzing the issue of educational quality is the way in which they report test results. When the results of PISA 2012 were published, for example, the coverage in the region's media included expert analysis and infographics, and it disseminated the OECD's online reports; thus the poor results of the eight participating Latin American countries came to light. The media's coverage of the PISA results was broader than that of governments and NGOs, and the main message was the demand for change in education systems (Solano, Odell and Crutchfield, 2014).

The media and civil society's capacity to participate is affected by the right to access information on the activities of public institutions and on education results. Without such access it is hard for the public to monitor what is happening, and broader citizen participation is hindered. In Mexico, where the Federal Law on Transparency and Access to Public Government Information was approved in 2003, the secretariat of public education (SEP) has received the second-highest number of requests for information (after the Mexican Social Security Institute): more than 44,000, some 83.5 percent of which were answered (Instituto Federal de Acceso a la In-

formación y Protección de Datos, 2014). In Latin America 19 countries have freedom of information laws (UNESCO, n.d.) but according to an Associated Press investigation, just 38 percent of the countries of the region comply with the legislation (Harlow, 2011).

Governments can create forums for participation and can encourage civic involvement in devising, implementing, and assessing reforms. In fact, developing education plans and strategies can offer an opportunity to foster discussion and consensus, as well as to advance citizen participation and commitment to education more broadly.

In the Dominican Republic, for example, the government called in 2013 for a National Pact on Education Reform involving the state, social organizations, civil society and the private sector. Local, open consultations were held, as were events in which children were consulted, and proposals were received from individuals and institutions. Technical sessions were then held with representatives of various sectors to define the substance of the Pact (Centro Bonó, 2014). This experience was nourished by previous efforts such as the Dominican Initiative for Quality Education (IDEC), which involved participants from the government, civil society, the private sector, entrepreneurs and international organizations. IDEC defined 10 education policies for the country, with 30 priorities and 87 actions, and there is follow-up on these every six months, including through a monitoring center that provides online information about progress in meeting each of the 10 policies.⁵⁷

In Ecuador, the Ten-Year Education Plan (PDE) was approved by means of a referendum that gave the agreement social legitimacy and minimized opposition from political

parties and unions (Bellettini and Arellano, 2014). Moreover, civil society was invited to scrutinize implementation of the plan through independent monitoring of the agreed targets. With the support of the European Union, the ministry made the monitoring possible and the consortium led by the FARO group could use this forum for analysis to build capacity among local and national-level actors to oversee the plan's implementation, as well as to develop participatory social policies to strengthen the PDE (Bellettini and Arellano 2014).

A call to Latin American action

The countries of Latin America face the common challenge of improving the quality of education. The future of their citizens and of the region as a whole depends on success in meeting this challenge. In each country, government and society must collaborate to undertake and sustain a process of change in their education systems, so as to attain the goal of giving all children and youths a quality education.

A real social pact is required to move from the assertion of objectives and policy proposals to sustained implementation of the necessary change. Drawing up and implementing these pacts is a highly political process. The good news is that, to a large extent, the seeds have already been planted. Now they have to be fed and protected so that they can grow and thrive over time.

Countries are not alone as they embark on the path of change. The education quality agenda is region-wide. As they face the challenge of improving the education of their children and youths, they are also presented with many opportunities to collaborate in progress.

First, they can regularly share the lessons learned from the reforms and changes that each has effected. It is crucial to devise mechanisms to exchange information and know-how, so as to obviate the risk of “reinventing the wheel” and avoid making the same mistakes as others.

Second, they can combine efforts to craft innovations and find solutions to common problems. Setting up consortia that look for solutions through experimentation and assessment that transcend national borders could resolve small-scale problems and issues of lack of financial and human resources, which constrain the possibility of innovation.

Third, they can establish common targets and mutual monitoring commitments on educational progress. These commitments form a strategy that supports the sustainability and credibility of national efforts to improve education.

Just as the combination of targets, leadership and participation form the basis of processes of change and improvement at the national level, regional cooperation can underpin and give force to national endeavors. A **Latin American Pact for Quality Education for All** is possible and necessary. The seriousness of the challenge and the importance of closing the wide quality gaps in each and every country of the region demand it.

Notes

Chapter II

- ¹ “If a child is not motivated to learn and engage early on in life, the more likely it is that when the child becomes an adult, he or she will fail in social and economic life. The longer society waits to intervene in the life cycle of a disadvantaged child, the more costly it is to remediate disadvantage.” Heckman (2008), p. 290.
- ² Araujo et al. (forthcoming).
- ³ Berlinski and Schady (2015), summary of the available evidence on these effects.
- ⁴ Some countries have experimented with what are termed community arrangements, whereby the services are provided in informal schemes and thus are less expensive. Berlinski and Schady (2015) summarize findings of studies that show positive but modest effects on child development programs in Bolivia and Colombia, and negative effects in Ecuador.
- ⁵ Berlinski and Schady (2015) show, for example, that in most countries only a third of mothers with primary education or less read books to or look at picture books with their child.
- ⁶ Cost estimates were based on detailed information and simulations for these three countries. Benefits were estimated on the basis of information derived from impact assessments of such programs. See Berlinski and Schady (2015), Chapter 6.

- ⁷ Berlinski and Schady (2015) make the important clarification that these returns relate to programs that target children from poor households. Thus it is not certain that they apply if the programs are not targeted.
- ⁸ OEI/CEPAL/SEGIB: *Metas educativas 2021* (2011).
- ⁹ This data covers only nine countries and excludes certain kinds of spending (on health care, for example), and thus it was not feasible to disaggregate spending by age and, in some cases, spending financed at the subnational level. SIPI (2015) provides an alternative estimate that nonetheless considers another age range (children up to the age of eight) and a broader spending range.
- ⁷ The estimated costs are 0.03 percent of GDP in Chile, 0.07 percent in Colombia and 0.18 percent in Guatemala for the first option, and 0.12 percent, 0.45 percent and 1.14 percent of GDP for the same countries in the second option.

Chapter III

- ¹¹ Available at: <http://www.becavocaciondeprofesor.cl/>.
- ¹² Available at: http://www.pronabec.gob.pe/2015_BecaVocacionDeMaestro.php.
- ¹³ This is the case of the Dominican Republic, for example, where as a result of a significant salary increase, full-day teachers earn more than other university graduates (EDUCA and Inter-American Dialogue, 2015); It is also true of Ecuador, where a teacher's starting salary for professionals with a university degree rose from US\$396 in 2006

to US\$775 in 2011, and to US\$817 in 2012 (Cevallos Estarellas and Bramwell, 2015).

- ¹⁴ El Salvador has a mandatory exam for teachers who want to work in the public sector (the Academic and Pedagogical Skills Assessment, ECAP). However, the reliability of the results has been questioned because the “items bank” used to compile the test has been the same since 2001 (FUSADES and Inter-American Dialogue, 2015).
- ¹⁵ A school’s performance is measured by its scores on standardized tests in language and math, innovative activities in the school, indicators of equality of opportunities (dropout and repetition rates, and absence of discriminatory policies) and parent-teacher integration, as well as improvements in working conditions.
- ¹⁶ Available at: <http://fundacionexe.org.co/>.

Chapter IV

- ¹⁷ Bolivia and Venezuela are exceptions to this regional trend.
- ¹⁸ In Guatemala and Peru the assessment units operate almost entirely with funding from the national budget and not from international sources, unlike in the past. This growing independence from external agencies indicates that there is national political will to keep these units fully operational, even when test results are poor and amount to “bad news” for the political authorities and policymakers. This was not an obvious prediction 10 years earlier.
- ¹⁹ As regards publication of the data, there are at least eight different ways of reporting the results and explaining how

to interpret them: (i) complete reports with the national and subnational results for each round of assessment; (ii) reports that show longitudinal progress in the past 5–10 years; (iii) individual reports for students and schools in the case of high-stakes assessments (generally password-protected to ensure confidentiality); (iv) databases for academic use (research); (v) secondary analysis by assessment units or external researchers; (vi) teaching recommendations based on released items and test results; (vii) online search engines to find results (when they are not confidential) and examples of tested curricular contents; and (viii) a variety of audiovisual presentations (PowerPoint, Prezi, videos and so on).

²⁰ By contrast, one can imagine applications for tablets or smartphones in which the navigation options tend to be limited, but that are very clear and easy to use.

²¹ Uruguay offers an interesting case: the National Administration of Public Education conducts online assessments using computers provided by the Plan Ceibal. The teachers can monitor their students from their own computers while they take the exam, have access to the results, and can see each student's score and individual answers. The test results come with information to help teachers interpret them—for example, a detailed description of an item to aid understanding of a question, analyze recurrent conceptual errors, and plan remedial interventions (Luaces, 2014). The teachers also have access to “teaching guides” developed by specialists to help them improve their teaching methodologies.

²² For a recent example in Mexico, see Hoyos, García-Moreno and Patrinos (2015).

- ²³ IDEB does not control for socioeconomic level or school size.
- ²⁴ There have been local-level experiences, as in Bogotá.
- ²⁵ Zúñiga Molina and Gaviria (2010) suggest that the probable percentage of copying or cheating in all grades between 2006 and 2009 was high—it rose from 4.5 percent in 2006 to 7 percent in 2008 (OECD, 2011, p. 61). Moreover, a review team from the Organization for Economic Cooperation and Development (OECD) noted that in many of the schools they visited, some teachers asked poorly performing students not to attend class on the day of the ENLACE tests, while others actively helped students to complete the exam (OECD, 2012, p. 126). In 2014, the secretariat of public education announced the suspension of the ENLACE exams, citing numerous cases in which teachers gave students the test answers beforehand, or corrected wrong answers to improve scores (Martínez Carballo, 2014). The OECD attributes this to the fact that teachers receive pay bonuses if their students score well in the exam, and that the media often use the exam to rank schools (OECD, 2011, p. 85).

Chapter V

- ²⁶ The dynamic and interactive possibilities of new technologies give rise to greater motivation, which in turn fosters student participation and involvement in classroom activities that are conducive to learning. Various studies on the impact of new technologies on subject learning also indicate positive results in developing cross-cutting skills such as communication, collaboration, independent learning, and team work (Claro, 2010).

- ²⁷ This figure was obtained from the average of education spending per student in Latin American countries. Each country's spending is taken from the UNESCO database (UIS), accessed on February 4, 2016. Figures for the following countries (the only data available) were used for 2010–2014: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru and the Dominican Republic.
- ²⁸ In nine localities in California that use the model as a support resource, the results were positive for both teachers and students (SRI Education, 2014). Some 85 percent of teachers reported that Khan Academy had a positive effect on their students' learning.
- ²⁹ The study also found that a combination of Khan Academy with tablets had more positive effects than a combination with computers. Another interesting finding is that lack of Internet access was more effective than actual access, considering that Khan Academy provides both online and offline tools. This is partly because of the unreliability of the connection in Sacatapéquez schools.
- ³⁰ Businesses in the fields of technology and education have been important actors in teacher training. The Proniño program, for example, promoted by Fundación Telefónica, has provided laboratories and trained teachers in 13 countries of the region; Nokia and Pearson's BridgeIT initiative has worked on the use of mobile phones in the classrooms of schools in Chile and Colombia; the Intel Educar program, which runs in eight countries of the region, has trained thousands of teachers; and Microsoft offers free

online courses and a worldwide innovative teachers program (SITEAL, 2014).

- ³¹ One successful example is iEARN, an NGO comprising more than 30,000 schools and youth organizations in more than 140 countries. iEARN empowers teachers and young people to work together virtually using the Internet and other new technologies. More than 2 million students and 50,000 educators collaborate on different projects.
- ³² According to Arias and Cristiá (2014), teachers' professional training should develop in three dimensions: (a) general skills to use a computer, manage files, use productivity software and Internet tools (browsers and email); (b) ability to use software that is specific to a certain academic area; and (c) general familiarity with various educational applications that can be used for different subjects and grades, as well as with appropriate teaching strategies.
- ³³ The findings of a study on the Plan Ceibal reveal the importance of the principal in ensuring that both teachers and students make more comprehensive use of computers (Trucco and Espejo, 2013). To date, however, there is little evidence on the specific abilities that should be strengthened among principals, and few interventions in the region target the schools' management teams (Arias and Cristiá, 2014).
- ³⁴ For example, Berlinski and Busso (2013) assessed a range of technologies to complement teaching programs for seventh-grade math in Costa Rica.

Chapter VI

- ³⁵ According to OECD estimates (OECD, United Nations and CAF, 2015), in Latin America the automotive and machinery industries are the ones that find it most difficult to find qualified workers for their operations.
- ³⁶ As a reference, on average, 36 percent of companies offer training, which reaches 53 percent of workers.
- ³⁷ Cárdenas, de Hoyos and Székely (2014) also found that per capita GDP growth is associated with a smaller percentage of “NEETs” among men. On the other hand, the degree of openness to international trade is related to a larger percentage of “NEETs”, probably because the transformation in productivity that such openness generated worsened conditions for workers with few skills and little experience.
- ³⁸ Between 2008 and 2012, 55.3 percent of the region’s higher education institutions exclusively undertook teaching functions, while research universities or universities with research (depending on the intensity of the research undertaken) represented less than 2.5 percent of institutions (Brunner and Villalobos Dintrans, 2014).
- ³⁹ In Ecuador, for example, the university assessment process in 2012 revealed deficiencies in terms of supply and of students (Brunner and Villalobos Dintrans, 2014). As regards supply, it found poorly trained teachers with little connection to society and low research standards, as well as infrastructural shortcomings, among other things. With respect to students, in the last years of their degrees, general competency exams revealed grave deficiencies

in reading comprehension and extracting the main ideas from a text. Given the results of the evaluation, Ecuador closed 14 institutions and put in place assessment, accreditation and categorization processes for the system.

- ⁴⁰ For more information, see: <http://www.oecd.org/pisa/keyfindings/PISA-2012-results-volume-V.pdf>.
- ⁴¹ One of the programs that have had positive results in the long term is the Seattle Social Development Program for students between first and sixth grades in Seattle public schools in areas with high crime rates. The program trained teachers in proactively handling the classroom, dispute settlement, interactive teaching and collaborative learning, among other activities, and had better results over the long term in scores, higher graduation rates in secondary school, higher self-efficacy awareness in participants, and better mental health. Studies on the program can be found at <http://www.ssdp-tip.org/SSDP/findings.html>.
- ⁴² The KIPP schools (<http://www.kipp.org/our-approach/character>) are an excellent example of this, and have been studied in great detail.
- ⁴³ See, for example, <https://characterlab.org/character-growth-card/>.
- ⁴⁴ The OECD, for example, already includes non-cognitive skills measurements in PISA questionnaires.
- ⁴⁵ Almeida et al. (2015) found evidence of cost-effectiveness of the technical system in Brazil by comparing the cost of supply of an average course and the income of individuals who had taken technical or vocational courses.

- ⁴⁶ For examples of modern TVE specializations, see the case of Costa Rica in detail at <http://www.thedialogue.org/blogs/2016/02/retos-y-potencial-de-la-educacion-tecnica-en-costa-rica/?lang=es>.
- ⁴⁷ See, for example, the case of Sweden at <http://www.thedialogue.org/wp-content/uploads/2016/01/Policy-Brief-ETV-Secundaria-Diagramado-FINAL1.pdf>.
- ⁴⁸ Available at: <http://www.graduadoscolombia.edu.co/html/1732/w3-channel.html>.
- ⁴⁹ Available at: <http://www.mifuturo.cl/>.
- ⁵⁰ The state of New York offers full scholarships to secondary school students who graduate in the top 10 percent of their school, and who study disciplines related to science, technology, engineering or mathematics in state universities, with an understanding that they will live and work in one of these areas in the state once they graduate (NYS Higher Education Services Corporation, n.d.).

Chapter VII

- ⁵¹ On average, they estimate a cost equivalent to 0.06 percent of GDP.
- ⁵² It is worth mentioning that these results are very similar to the ones Becerra, España and Fiszbein (2003) found a decade earlier, which suggests structural inefficiencies.

Chapter VIII

- ⁵³ These schemes correspond to horizontal, vertical and social accountability mechanisms (O'Donnell, 1998; Smulovitz and Peruzzotti, 2000).
- ⁵⁴ The assessment focuses on six areas (planning, budget, institutional organization, professionalization, transparency and participation). See the System of Follow-Up and Information on the Implementation of Regional Education Programs (SSIIPER) at: <http://ssiiper.cne.gob.pe/>.
- ⁵⁵ Since 2006 there have been 10 FONIDE competitions and more than 70 studies.
- ⁵⁶ The council acts as a technical secretariat specializing in five areas (higher education, school education, research and public information, management and finance, legal) that produce the necessary technical information for council decision-making.
- ⁵⁷ The monitoring center can be found at: <http://www.idec.edu.do/Mesas/Index/1>.

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Since its founding in 1979, Fundación Santillana has sought to collaborate in the creation and dissemination of relevant information that contributes to the improvement of education in Latin America and Spain. Numerous partnerships with important international, private and non-profit organizations, universities, experts and researchers, have promoted our vocation to disseminate relevant work and have allowed us to collaborate in the creation of educational knowledge.

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ISBN 978-950-46-5025-6



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