Chapter 4

Education and skills for inclusive growth in Latin America

This chapter offers a recent overview of education systems in Latin America and their capacity to achieve inclusive growth. It begins by describing the achievements made in investment and enrolment rates at the various levels of education and identifying some of the challenges that lie ahead for the region. It then looks at changes in performance, especially in secondary education, and the school-related and social factors behind those changes. The chapter looks at inequality patterns in the education systems related to socio-economic income, geographical location and gender. There is also a discussion of recent changes to education policies in the region, with an overview of the experiences of OECD countries in implementing such policies. The chapter concludes by making policy recommendations based on this analysis.

Education can drive growth and social inclusion, develop the population's skills and create greater equality of opportunities. This chapter analyses the education and skills landscape in Latin America. It presents the policies that have been adopted and those that should be implemented to have a greater impact on inclusive growth. In particular, it analyses aspects related to investment, enrolment rates, performance and equity throughout the education cycle.

Although strides have been made in investment, major challenges still lie ahead in all areas. Investment in education has risen, but is still insufficient in areas such as early education that have a strong influence on children's future development. The different dimensions of inequality (individual and regional) require the objective of equity to be placed at the centre of the agenda.

It is essential to identify specific interventions that should be made in traditional areas of education policy, such as accreditation, policies on teaching, working conditions, the school system and school autonomy (see the discussion in the country notes at the end of this report).

The first part of this chapter emphasises the importance of education and skills for economic development. The second section compares Latin America's key indicators with those of other emerging economies and the OECD countries. These indicators include education enrolment rates and performance in cognitive and non-cognitive skills. The third section analyses the considerable socio-economic, gender and geographical inequalities in the region compared with inequality levels in other countries. The fourth section focuses on education policies, describing the recent educational agendas implemented in Latin America as well as the experience of OECD countries with both reforms and policies and their implementation. The chapter concludes by presenting a series of policy recommendations to improve performance and make education more relevant in an equitable manner.

Education and skills have a considerable impact on the population's economic and social well-being

Education and skills play a key role in a country's development. They can improve well-being, social inclusion and economic progress, as long as the government introduces the necessary reforms. Capacity building should take into account and promote the link between education and the jobs market (Chapter 3) and lead to better social inclusion in participatory democratic societies. Education should promote a person's integral development for his or her productive and social inclusion, developing both cognitive skills and soft skills. Soft or non-cognitive skills cover areas related to personality traits (conscientiousness, emotional stability, agreeableness, extroversion, openness to experience), goals, motivations and preferences that are valued in areas of life and situations that go beyond school and the workplace (Heckman and Kautz, 2012).[1]

Education is a fundamental part of well-being in OECD countries.

Various aspects highlight the importance of education, knowledge and skills for welfare. In addition to its intrinsic value, education has a positive effect on people's material conditions, their physical and mental health, their civic engagement and their capacity to participate in society (OECD, 2011). A good education improves a person's chances of finding a job, which means that those who are better educated are less vulnerable to unemployment and informal employment. Education is one of the eleven dimensions of well-being measured by the OECD. These dimensions analyse the stock and quality of human capital.[2] In Latin America, performance in education and the

distribution of educational results by socio-economic income, geographical location and gender remain less equal than in the OECD countries, which has an impact on the population's well-being (OECD/ECLAC, 2014).

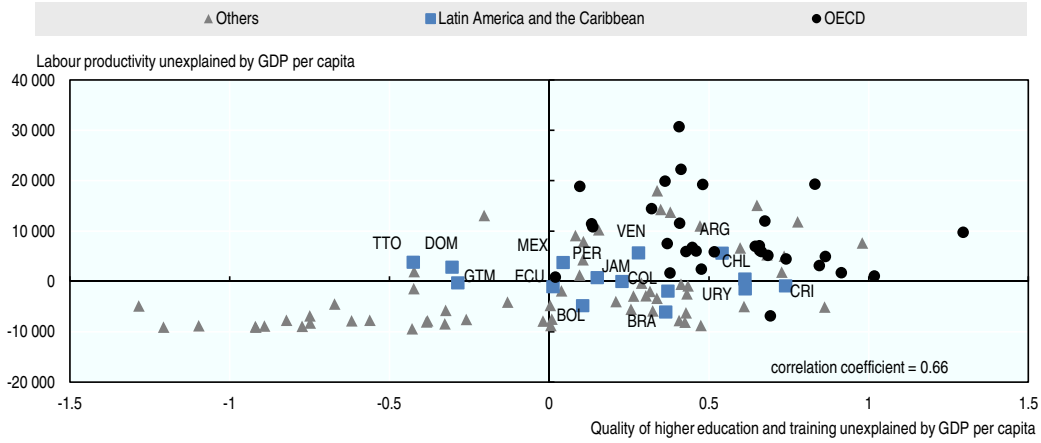
Education's impact on economic development depends mainly on educational quality and performance. Inputs such as average years of schooling and enrolment rates may differ from one country to another, and only reflect the amount of education, without necessarily having direct effects on economic growth (Pritchett, 2006). Recent studies emphasise the importance of the quality of education and the development of skills as factors that drive economic development. For example, a 25-point improvement in PISA test results in the 2000s (slightly less than the improvement by Poland, the country that most improved its performance during that decade) gives the OECD economies a cumulative gain of USD 115 trillion during the life cycle of the generation born in 2010, about 2.4 times the countries' total GDP (OECD, 2010a).

Improvements to education can bring major economic gains to the region.

Skills-intensive industries grow faster in countries with a more skilled workforce (Ciccone and Papaioannou, 2009), which also adopt new technologies and production processes more quickly. An increase of one standard deviation in cognitive skills (measured using PISA-type exams) is associated with approximately a 2% increase in annual growth of per capita GDP (Hanushek and Woessmann, 2012a).

Better-quality education would bring substantial economic gains to Latin America. Although enrolment rates are similar to those of other emerging economies, poor performance in skills is a major factor behind Latin America's sluggish growth in GDP per capita compared to that of other economies, especially those in Asia. Although years of schooling explains 28% of the difference in GDP per capita between Latin American and OECD countries, when the performance factor is included, human capital explains almost 60% of that difference (Hanushek and Woessmann, 2012b). Better-quality education is linked to higher labour productivity, even when controlling for per capita income (Figure 4.1). When controlling for key development factors – the quality of institutions, the macroeconomic environment, the development of financial markets, market efficiency, innovation and sophistication – as well as for logistics and infrastructure, a one-point increase in a country's quality of training and higher education (on a scale of 1 to 7) results in a labour-productivity gain of 32%. A one-point increase would require considerable efforts in education, with Colombia and Brazil achieving the OECD average and Chile catching up with the United States. However, the economic benefits would be substantial and direct.

Figure 4.1. **Quality of education and labour productivity: Partial correlations**
(2012, values)



Note: Partial correlations used GDP per capita as a control variable. Labour productivity is defined as GDP per employed person in 2012 US dollars, adjusted for purchasing power parity (PPP). The quality of education and training is part of the fifth pillar of the World Economic Forum's *Global Competitiveness Index*. The index is on a scale of 1 to 7, with 7 representing the highest quality of education. Chile and Mexico are labelled as Latin America and the Caribbean (LAC) rather than as OECD.

Source: Authors' calculations based on OECD/PISA 2012 database.

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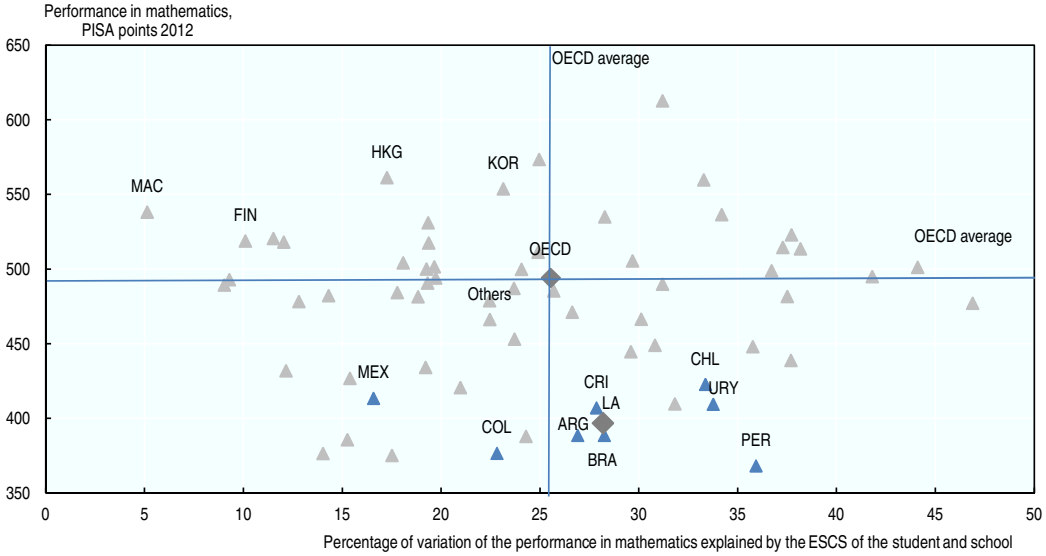
Quality and equity are compatible goals.

More equitable participation in education could drive inclusive growth in the region. The right to education implies aspiring towards high-quality, compulsory education to guarantee student equality and inclusion (UNESCO, 2005). All Latin American countries that participated in PISA 2012 except Colombia and Mexico had lower equal opportunities than the OECD average. Performance in mathematics was also below the OECD average (Figure 4.2).[3] According to household surveys conducted in 2012-13 (Gallup Organization, 2014), 80% of the population in OECD countries believe that children have the opportunity to learn and grow each day. By contrast, in Latin America only 60% of the population believe so. In Argentina, Brazil, Colombia, Paraguay and Peru, less than half the population believe that children have this opportunity.

Quality and equity in education are compatible goals. This is the case of Hong Kong (China), Macao (China) and OECD economies like Korea and Finland. In Latin America, Mexico has improved its performance and considerably reduced inequalities in recent years. In general, the highest-performing countries in secondary education are those that allocate educational resources more equitably among socio-economically advantaged and disadvantaged schools (OECD, 2013a). Socio-economic background and social environments are key markers of performance in Latin America. The socio-economic status of the student and the school account for around 30% of the performance variation of secondary-school students in the region. To foster further inclusive growth in the Latin American economies, school-performance improvements must be accompanied by greater inclusion.

Figure 4.2. **Secondary-school performance and equity in education**
(PISA 2012)



Note: Latin America ("LA") comprises Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay. "Others" comprises Albania, Bulgaria, Croatia, Dubai, Hong Kong (China), Indonesia, Jordan, Kazakhstan, Latvia, Liechtenstein, Lithuania, Macao (China), Malaysia, Montenegro, Qatar, Romania, Russia, Serbia, Shanghai (China), Singapore, Chinese Taipei, Thailand, Tunisia and United Arab Emirates. The percentage change in mathematics performance explained by the economic, social and cultural status of students and schools is obtained from a student-level regression where the explanatory variables are the economic, social and cultural status of the student and that of the school.

Source: Authors' calculations based on OECD/PISA 2012 database.

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Economic development and social inclusion also depends on other factors, not just on cognitive skills. Human development, and economic and social integration in general, depends on factors not necessarily linked to knowledge acquisition. In the United States, for instance, studies conducted on the General Educational Development Testing service (GED Testing), which seeks to assess general knowledge and provide certification for high-school dropouts, found that young people with GED certification do not have the same level of labour-market integration as high-school graduates. High-school graduates had better salaries, better job types, higher labour-market integration and higher social integration than GED recipients. This is largely because the GED recipients do not acquire soft (or non-cognitive) skills related to openness to experience, conscientiousness, extroversion, agreeableness and emotional stability (Heckman, Humphries and Kautz, 2014). As discussed in the next section, these skills can be developed from a young age, and an education that fosters their development provides good results in areas such as higher education, health, the labour market and social integration.

Towards more effective investment in education to boost enrolment rates and quality

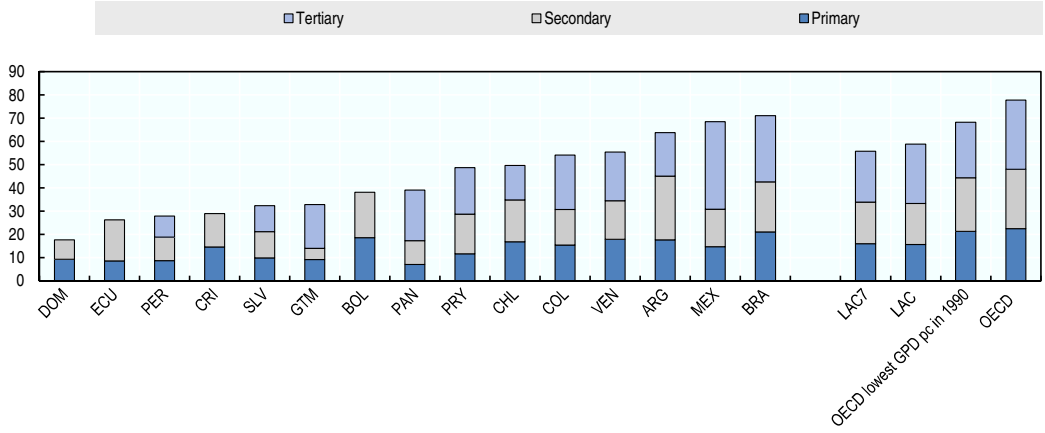
Although public investment in education has increased in recent decades in Latin America, it remains relatively low in primary and secondary education in most countries. In the 2000s, some countries' investment levels were close to the OECD average, but most were not. As a percentage of GDP, total government spending in 2012 was slightly over 5% in Latin America, compared with 5.6% for the OECD countries (see country notes). Government spending per student in secondary education was 18% of GDP per capita

in Latin America, compared with 26% for the OECD countries. This percentage is lower than that observed in 1990 in the lower-income OECD countries, whose progress has been similar to that of Latin America (Figure 4.3).

However, since these figures only consider public investment in education, they ignore the fact that a substantial proportion of financing in education in Latin America comes from the private sector. Having grown rapidly in the region during the 1990s, private-sector funding now accounts for 40% of education spending in Chile and 35% in Colombia, more than double the OECD rate (16%) (OECD, 2014a). Private enrolment ratios are also higher in Latin America. According to figures for 2012, the ratios were 44% for pre-primary education (31% in the OECD countries), 25% for primary education (10% in the OECD countries),[4] and 50% for tertiary education (29% in the OECD countries). The tertiary-education figure is very high in Belize (96%), Brazil (71%), Chile (84%) and El Salvador (68%).[5]

Public investment in primary education is low throughout the region except in the Plurinational State of Bolivia (hereafter "Bolivia") and Brazil, and in secondary education is low throughout the region except in Argentina. The spending gap between the region and the OECD countries is lower in tertiary education, but some countries still have challenges they must deal with, including Argentina, Chile, El Salvador, Guatemala and Peru.

Figure 4.3. **Government expenditure per student as % of GDP per capita, circa 2012**



Note: The Latin American and Caribbean countries included are the fifteen with the highest GDP in current dollars among the countries for which data are available, as of 2011. "LAC7" refers to the seven largest Latin American and Caribbean economies. No tertiary-education data are available for Bolivia, Costa Rica, the Dominican Republic and Ecuador. The OECD countries with the lowest GDP per capita (pc) in 1990 were Chile, the Czech Republic, Estonia, Hungary, Korea, Mexico, Poland, the Slovak Republic, Slovenia and Turkey.

Source: UNESCO Institute for Statistics (UIS) database.

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These modest levels of investment in education partly explain poor student performance, highlighting weaknesses in the quality of the education system. Consequently, some countries in the region still need to step up public investment in education to improve enrolment rates and performance quality. Higher tax revenue is needed to achieve this and ensure the sustainability of public debt (see Chapter 2). In pre-primary education, except in rare cases like Chile (0.6% of GDP) and Cuba (0.9% of GDP) and the Bolivarian Republic of Venezuela (hereafter "Venezuela") (0.8% of GDP), public investment in the countries of the region as a percentage of GDP remains low, 40% below the OECD average.[6] Spending on pre-primary education usually provides higher returns than spending on higher levels of education, which suggests that pre-primary education should be made a priority for educational resources (as analysed later in this chapter).

A greater focus on quality of investment to ensure it is effective.

The effectiveness and proper implementation of investment in education are just as important as the amount. Education spending needs to be efficient, especially during periods in which the fiscal space is limited. The efficiency of spending on both primary and secondary education varies greatly across the region. Even without increasing the teacher-student ratio, the least efficient countries could improve results in primary and secondary education by 3-4% and 9-11% respectively (Salazar Cuéllar, 2014). In tertiary education, although countries such as Honduras and Mexico invest heavily, enrolment rates remain low.

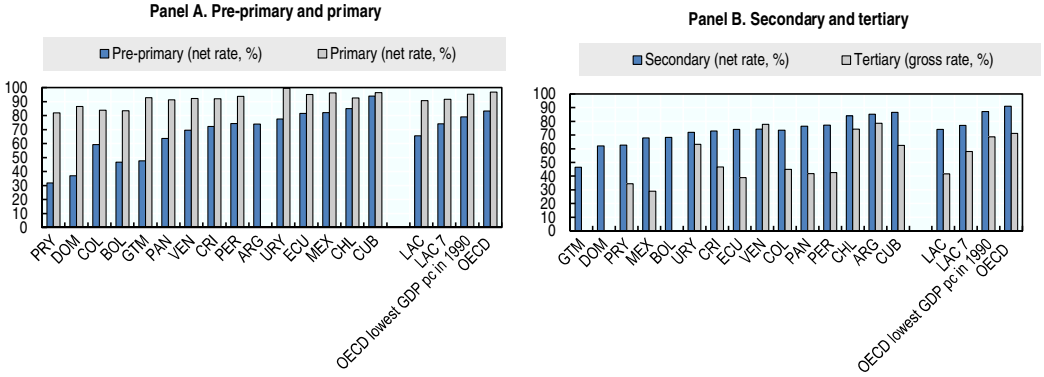
Efficiency and equality objectives could be reached through optimal distribution and use of resources, ensuring that resources are channelled to where they are most needed. The OECD has identified four key policy areas to ensure that school resources are used more efficiently to improve student performance (OECD, 2013b). These four areas are: governance of resource use in schools (resource levels, sources of revenue, and planning of resource use); resource distribution (by education level and sector, across specific student groups, and for facilities and materials); resource utilisation (according to student needs, learning time, and teaching and learning environments); and resource management (transparency, reporting, and incentives for effective use and assessment of use). These four aspects can make the same level of investment in education more effective. The following section describes recent enrolment trends, particularly in early education, and performance achievements and challenges in secondary education.

Enrolment must continue to grow, especially in pre-primary education

Efforts in recent decades to increase enrolment rates have raised school life expectancy considerably, although dropout rates need to be cut. In the early 1970s, Latin America and the Caribbean had a school life expectancy of less than eight years, thus ranking below Central Asia, East Asia and the Pacific, and Central and Eastern Europe. By 2012, Latin America and the Caribbean had increased its school life expectancy to 13 years, ranking only behind Western Europe and North America (approximately 17 years for the OECD countries).[7] Nevertheless, around a fifth of students in the region drop out before the end of primary school, compared to less than a tenth of students in Central and Eastern Europe, Central Asia, and East Asia and the Pacific (UNESCO-UIS, 2012). Reducing the number of younger students who leave school remains a challenge in the region.

Although considerable efforts have been made to increase enrolment, it remains low in some areas of education, especially the lowest and highest levels. The policies introduced in recent decades to increase enrolment in education have been successful in most Latin American countries. Enrolment in primary schools is close to the OECD average in most countries in the region. In secondary education, the difference between the region's enrolment rate and that of the OECD countries has narrowed, but the region has not made as much progress as the Asian countries. In China, enrolment in secondary education has risen by almost 140% since 1990, compared to only 50% in Latin America. Work still needs to be done at the lowest and highest levels of education. Bolivia, the Dominican Republic, Guatemala and Paraguay have low net enrolment rates (less than 50%) in pre-primary education, while Ecuador, Mexico, Panama and Peru have low rates in tertiary education (Figure 4.4). Even in countries that have increased enrolment in secondary education, two- and even three-shift schools are common, as is teacher absenteeism, resulting in fewer schooling hours than in the OECD countries.[8]

Figure 4.4. **Enrolment rates as % by level of education**
(circa 2012)



Note: The Latin American and Caribbean countries included are the 15 countries that had the highest GDP in current dollars in 2011 among the countries for which data are available. "LAC7" refers to the seven largest Latin American and Caribbean economies (no data for Brazil and no primary-education data for Argentina are available). The net enrolment rate refers to the total number of students in the theoretical age group for a given level of education enrolled in that level, expressed as a percentage of the total population in that age group. The gross enrolment ratio refers to the number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education. See the country notes for the definitions of the different education levels.

Source: UNESCO Institute for Statistics (UIS) database.

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Furthermore, the early stages of education are still affected by exclusion, which can either be effective (students outside education) or potential (students in education with a high risk of leaving) (UNESCO-UIS/UNICEF 2014). An estimated 21.6 million children of preschool, primary-school or secondary-school age are effectively or potentially excluded. The lack of household financial resources affects school dropout rates. According to 2012-13 household surveys (Gallup Organization, 2014), around 55% of households in Latin America are concerned about not being able to pay for the education of their children.

Effective exclusion levels are most critical in early education, with 14% of children not having access to the final year of preschool or to primary school. Similarly, potential critical exclusion among male students (leading to a higher risk of leaving) in primary school (15%) and secondary schools (25%) is also considerable. These indicators show an upward trend in preschool and primary-school exclusion between 2008 and 2011 and a slight decline in secondary-school effective and potential exclusion.

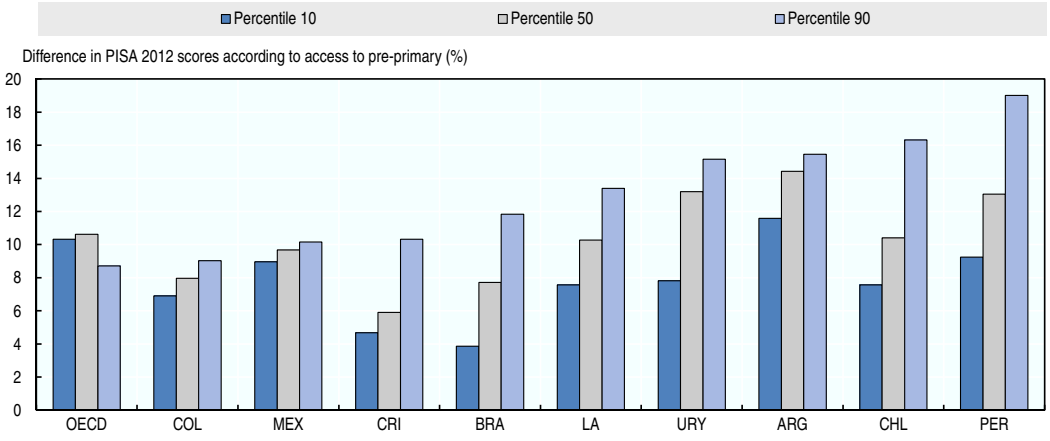
Early education can affect adult life significantly, so it requires additional support.

More enrolment in early education is essential, because it offers greater returns than other education levels. Compared to other stages of education, attending pre-primary school offers a very low opportunity cost and a very high potential performance boost. Experiences in developed economies, such as the Abecedarian early-childhood programme and Perry Preschool Program in the United States, have shown positive results in skills development, leading to better labour-market integration in the future (Heckman, 2006). Policies aimed at extending pre-primary enrolment in emerging economies are essential in countries with low enrolment rates at higher education levels and relatively low levels of quality.

The experiences in Latin America reveal that pre-primary education has major positive effects, even after controlling for household socio-economic status. Pre-primary education raises PISA scores by 41 points, reflecting knowledge equivalent to one

additional year of secondary education.[9] In Uruguay, pre-primary attendance provides an average performance gain of 13% in secondary school (Figure 4.5). Furthermore, the rate of return of investment in pre-primary education is 14% (Berlinski, Galiani and Manacorda, 2008). In Argentina, the results of higher enrolment rates in pre-primary schools are clear even in primary education, in which performance already improves (Berlinski, Galiani and Gertler, 2009). Positive effects have also been observed in other countries in the region. Analysis of Bolivia's PIDI early-childhood development programme (*Proyecto Integral de Desarrollo Infantil*) suggests that it results in better cognitive skills, better physical characteristics and a higher school completion rate, which leads to higher income in the future and provides a highly efficient cost-benefit ratio (Behrman, Cheng and Todd, 2004). Early-childhood intervention programmes therefore substantially improve cognitive and non-cognitive skills (such as motivation, perseverance and tenacity), which are undoubtedly essential for a person's development in society.

Figure 4.5. **Effects of pre-primary education on secondary education**
(%) 2012 Latin American vs. OECD countries



Note: Latin America ("LA") comprises Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay. The percentiles refer to the performance distribution (in PISA scores).
Source: Authors' calculations based on OECD/PISA 2012 database.
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To maximise the benefits of early-childhood education, policies need to extend beyond enrolment rates. The results of programmes that seek to increase enrolment, and especially those that seek to support families with a low socio-economic status, could provide greater benefits. More and better infrastructure is needed for childcare centres, children need to spend more time in those centres, and staff need better training (Noboa and Urzúa, 2012; Bernal et al., 2009). The benefits should not be measured only in terms of nutritional development and better cognitive performance. From early childhood, efforts should seek to develop non-cognitive factors such as conscientiousness, emotional stability, extroversion, openness to experience and agreeableness (Heckman, Humphries and Kautz, 2014). The repercussions of these elements reach beyond the classroom to the labour market and other areas.

Providing support in planning, implementing and reviewing tasks, as well as fostering interactions with others in problem-solving, has lasting benefits. Perry preschools in the United States and specific interventions in Jamaica illustrate how early-child stimulation in children from a low socio-economic setting has long-term effects (Heckman, 2006; Gertler et al, 2013.). These initial efforts should be backed up throughout the person's life cycle, with subsequent investments in high-quality learning and skills.

Improving the quality and performance of skills are the main challenges in education

Latin America has major problems developing skills in primary education. Skills development begins in early childhood and has fundamental repercussions throughout one's studies and working life. Exam results show that primary-school children have a poor understanding of concepts and domain-specific knowledge and have poorly developed cognitive processes, that is, the operations to establish relationships with and between objects, situations and events. For example, in the SERCE study (*Segundo Estudio Regional Comparativo y Explicativo*), only 11% of Latin American third-grade students who took the study's mathematics test in 2006 could recognise a number sequence rule. Similarly, only 11% of sixth-grade students who took the same test were able to find averages and do calculations using the four basic operations in the field of natural numbers. There were huge performance differences among countries in the region. In Cuba, more than half the students were able to solve the above problems, but in the Dominican Republic, fewerthan 1% could do so (UNESCO/LLECE, 2008). These results underline the need to continue assessing the quality of primary education in a manner that allows comparisons among countries in the region and analysis of the policies needed to boost the quality of education and reduce inequalities in primary-education learning.

Skills performance by Latin American secondary-school students were analysed based on the results of the 2012 PISA test, which was taken by around half a million students from 65 countries, including 31 non-OECD economies. Eight Latin American countries took part: Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay (see Box 4.1 on PISA and Latin America). The 2012 test focused on mathematics, a fundamental field for development, given its importance for describing, explaining and predicting phenomena and for enabling informed decisions in the workplace and in everyday life.

The purpose of the exam is not only to offer a picture of mathematics knowledge, but also to analyse whether students can extrapolate and apply their mathematics knowledge to real life. The implications of good performance in this test are considerable, since it would imply better use of skills by individuals in the labour market, predicting good mathematical reasoning in a multitude of situations. This would strengthen skills in various sectors in which the region continues to lag behind other emerging economies (see Chapter 3 for a comparison of labour-market skills).

Box 4.1. **PISA and Latin America**

The PISA tests are conducted every three years among 15-16 year-old students, with each test focusing on a different domain. The 2000 and 2009 tests focused on reading, the 2003 and 2012 tests on mathematics and the 2006 and 2015 tests on science. Although each test has a specific focus, with many of the questions on that year's field, students are tested in three areas, allowing comparisons to be drawn between each year's results.

Eight Latin American countries participated in the 2012 PISA test: Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay. Only two countries (Brazil and Mexico) have taken part in every PISA test since its inception in 2000. Argentina and Chile participated in 2000, 2006, 2009 and 2012; Peru in 2000, 2009 and 2012; Uruguay in every test since 2003; Colombia in every test since 2006; and Costa Rica participated for the first time in 2009.

PISA compares results by calculating performance trends between two assessments focused on the same domain. For mathematics, comparisons are between the 2003 and 2012 results. The 2015 PISA test will focus on science, so results will be comparable with those of 2006.

To provide a concrete idea of what the scores represent, they are also expressed in terms of years of schooling, with 41 points representing one year. Thus the 101-point performance gap between Latin America's results and those of the OECD countries is equivalent to a gap of more than two years of schooling.

The results are classed into six proficiency levels. Students at Proficiency Level 1 (358-420 points in mathematics) can answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined. They are able to identify information and to carry out routine procedures according to direct instructions in explicit situations. All Latin American countries that participated in PISA 2012 except Chile were at this level. Chile scored 423 points, slightly above the threshold.

Latin American secondary schools are performing better but still have considerable room for improvement.

Most Latin American countries' improvements in secondary-school skills have been greater than the average performance improvement of the OECD countries. Brazil and Mexico sit alongside Tunisia and Turkey as the countries that improved their performance by most points per year (up 3 to 4 points per year) between their first participation in the PISA survey (2003 for Brazil and Mexico) and their 2012 participation.[10] Argentina, Chile, Colombia and Peru improved at a slower rate of between 1 and 2 points per year since 2006 (2009 for Peru). The performance of Costa Rica (since 2009) and Uruguay (since 2003) declined by 1 and 2 points per year respectively, which is of some concern given that OECD countries' performances declined by less than 1 point per year on average.

Similarly, many of the countries in the region have managed to reduce their performance gaps among students. Brazil and Mexico were able to improve their performance in mathematics between 2003 and 2012 by narrowing the gap between the best and worst students. By 2012 they were among the ten PISA-participating countries with the least variance in results, as were Argentina, Colombia and Costa Rica. As in Tunisia and Turkey, most of the performance improvements in Brazil and Mexico were among those students requiring most support, largely because they are from lower socio-economic backgrounds. The improvements were achieved by reducing the number of students with the lowest proficiency level by between 8 and 11 percentage points.[11]

However, not all countries in the region reduced the variance among students. In Uruguay, the decline in the average performance was concentrated in students with the lowest scores, which grew by 8 percentage points, while the proportion with the highest scores shrank by 1.4 percentage points, thus increasing the variance between students in Uruguay.

Despite these improvements in the main countries in the region, Latin American secondary schools still perform poorly. In all three subjects tested (mathematics, science and reading), the eight PISA-participating countries were in the bottom third of the 65-country ranking. In mathematics, even Chile, the best-performing Latin American participating country, was ranked among the bottom 15 participating countries in the world, and Peru finished at the very bottom of the ranking.[12] The results are even more worrying given that the test does not take into account the young people who do not attend school. Education enrolment rates are lower in Latin America, meaning there were fewer potential participants than in other OECD countries (see Figure 4.4 on enrolment). Despite the significant improvement in Brazil and Mexico, two-thirds of Brazilian students and half of Mexican students are below level 2 (basic skills) in mathematics.[13]

By comparing the relative rankings of Latin American countries in the 2012 PISA tests with their relative rankings in similar tests conducted in previous decades (1960-2003 average), we see that Peru has been overtaken by other countries in the region. Some countries – notably Colombia and Uruguay – have been overtaken by other emerging economies and other countries in the region (Hanushek and Woessmann, 2012a). For example, Turkey's average score in tests between 1964 and 2003 was lower than Colombia's and Uruguay's, but its 2012 PISA test score was higher than that of any Latin American country.

Tangible and intangible factors that can improve educational quality need to be explored.

A better understanding of factors affecting student performance is essential for education policy makers seeking to improve educational quality. Factors affecting educational performance vary depending on the grade, so policy solutions must be different for each level of education.

In primary education, student performance is strongly correlated with educational infrastructure and access to basic services. Learning is enhanced in particular by the presence of areas to support teaching (libraries, science labs and computer rooms), but also by access to basic public services such as electricity, telephones, drinking water, wastewater services and a sufficient number of toilets (Duarte, Gargiulo and Moreno, 2011).

In secondary education, other factors seem to come into play. Performance seems also to be affected by students' socio-economic background and the way the school operates. The PISA assessment includes information on students' family and educational background, the characteristics of schools, and other performance-related factors, enabling a detailed microdata analysis of these factors' effects.

Student-specific factors such as gender, socio-economic status and social environments are key elements in explaining school performance and are correlated with school infrastructure in Latin America. School-specific factors include those resulting from pedagogical variables such as extra classes taken by students, feedback from the school principals to teachers, and weekly classroom time.

Regarding the latter, the quality of student learning is related not only to the number of classroom hours but also to the use of classroom time. Minimising time spent on disciplinary matters is essential to improve learning in the classroom. In PISA 2012, in most participating countries, the best-performing schools tend to have a better disciplinary climate, even after controlling for the students' and the schools' socio-economic statuses (OECD, 2013a).

Where the quality of teachers is concerned, intangible variables and variables related to soft skills interact most with performance in both Latin America and the OECD countries. These include teachers' expectations of their students' futures, and to a lesser extent the type and level of teacher certification (see Box 4.2). These factors may require less spending than certain "traditional" policies such as higher teacher-student ratios, better physical infrastructure and teachers who are more qualified. In secondary education, access to a variety of schools and educational models, especially technical and vocational options, is also a key factor that boosts the quality of learning (Cullen et al., 2013).

Box 4.2. **Traditional and pedagogical factors associated with student performance**

Physical infrastructure or staff numbers alone do not seem to be associated with student performance in the OECD countries (OECD, 2013d). Other factors, however, such as the quality of teaching staff, organisational structures with professional leadership capacities, active parental involvement and the stimulation of high expectations among students, have been recognised as essential for effective performance in schools (Loeb, Beteille and Kalogrides, 2012; Sammons, Hillman and Mortimore, 1995). To study the impact of these factors in Latin America, Avendaño, Barrera, Nieto-Parra and Vever (forthcoming) use a method similar to that adopted by Dobbie and Fryer (2011) to analyse mathematics skills using student-level PISA 2012 data (around 510 000 observations in total).

First, they defined a base model to analyse mathematics performance (using PISA 2012 scores) using four variables related to students and their social environment: age, sex, student socio-economic status and school socio-economic status. Five traditional variables related to performance variation were later added to this model: class sizes, percentage of certified teachers, proportion of teachers with an ISCED 5A[14] diploma, and whether a school is public or private. Finally, they measured how performance variation is associated with pedagogical variables, referring to educational actions in each school: classroom time, use of assessment data, tutorial groups, additional classes, feedback from the school principal to teachers, and teacher expectations of student performance.

The results for the 34 OECD countries and 8 Latin American countries included in PISA 2012 indicate that the four student-related variables have a statistically significant positive impact on student performance. This base model explains 30% of performance variation in Latin American secondary schools, against 26% in the OECD countries.

Among the traditional variables, only larger class sizes are associated with better student performance, especially for very small classes, which lack sufficient interaction among students. As illustrated in Figure 4.6, some studies suggest the same result due to the effect of peers or because better-performing countries have larger class sizes. This has traditionally been observed in Asian countries (Pong and Pallas, 2001). Furthermore, this positive relationship can be explained by the fact that urban classes, which perform better, are relatively larger.

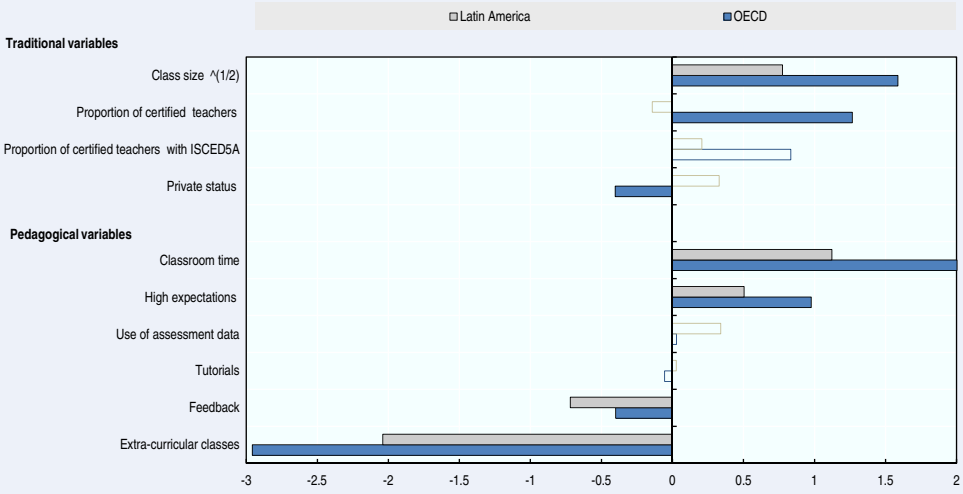
In Latin America, the proportion of teachers who are certified or who took tertiary education (ISCED 5A) has no significant relationship with performance, suggesting that the level of certification or qualifications currently in place does not guarantee a higher-quality education. The opposite results were found in the OECD countries. Additionally, after controlling for the base model, private schools were found to perform worse than public schools in the OECD countries. In Latin America there is no significant performance gap between private and public schools. Finally, the quality of educational resources and physical infrastructure has no statistically significant relationship with performance.

Box 4.2. **Traditional and pedagogical factors associated with student performance** (*cont.*)

The results for the variables associated with pedagogical actions in school indicate that in both the OECD and Latin America, high teacher expectations of students help boost performance. Similarly, classroom time is associated with better results. However, extra-curricular classes and feedback from the school principal to teachers are both negatively associated with performance in mathematics. This could be linked to the fact that it is normally students who are struggling the most who take additional classes and because principals normally give feedback in lower-performing schools.

With the usual caveats, the analysis shows that a student's socio-economic setting substantially affects his or her performance, and more so in Latin America than in the OECD countries. Additionally, the expected mean effect of traditional factors on performance in Latin America is relatively low, while the combination of other pedagogical factors can boost the quality of the education system. The results suggest that some educational actions that are not necessarily resource-intensive could improve Latin America's education systems.

Figure 4.6. **Effect on performance in mathematics**
(in months of schooling)



Note: "Latin America" comprises Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay. "OECD" comprises 34 countries. The size of the bars indicates the effect on performance (in months of schooling) of a change of one standard deviation in each of the independent variables. The bars are for the variables that are statistically significant at the 1%, 5% or 10% level. Dependent variable: individual score in mathematics. Other independent variables used in both methods (traditional and pedagogical) not included in the graphic are those that form the base model: gender, age, student socio-economic status and school socio-economic status. ISCED 5A: in the International Standard Classification of Education, ISCED 5A refers to tertiary-type programmes that lead to an advanced research qualification.

Source: Avendaño et al. (forthcoming), based on the OECD/PISA 2012 database.

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New technologies can supplement education policies and provide a solid foundation for educational support.

The role of information and communication technologies (ICTs) in education has grown rapidly in recent years. The region's education systems have considerably reduced

inequalities in access to ICTs in the home and at school. Although the percentage of PISA students with access to a computer at school remains higher in the OECD countries (93%) than in Latin America (71%), the gap has narrowed. Nevertheless, among the few assessments that have been conducted on the effective use of ICTs for learning, some found no significant effect on cognitive skills and student performance (Cristia et al., 2012). The evidence suggests that there is a basis for using ICTs to support education and boost the school's educational role (Claro et al., 2011; Espejo, Sunkel and Trucco, 2013).

Tertiary education is a key factor for developing and improving available skills.

Tertiary education stands out as a driver of development, strengthening a country's competitiveness in the global economy and generating personal and social benefits. In the knowledge-based global economy, the potential to innovate and boost competitiveness levels is closely linked to the higher-education system's capacity to increase the quantity and quality of skills available to a country's economy.

Higher levels of higher education improve social cohesion and mobility and provide personal benefits. Graduates have more chance of finding a high-quality, well-paid job, have better consumption and saving patterns and higher life expectancy, among other benefits (Brunner, 2013).

Quality remains one of the main challenges of tertiary education in Latin America, with access and enrolment having improved in recent years. According to the 2012-13 household surveys (Gallup Organization, 2014), around 40% of households in Latin America believe that university students in their country receive a lower quality of education than those in other parts of the world. This figure rises to 60% among Brazilian households and 77% among those in Peru. Latin American institutions also rank poorly in international university rankings. The Times Higher Education University Ranking for 2013/14 listed no Latin American or Caribbean university among the world's top 100 and only three among the top 400.

However, these rankings consider only a few aspects of higher education, so instruments to enable a better understanding of the quality of universities and skills are of special relevance. In this regard, in 2013 the OECD presented the first results of its Programme for the International Assessment of Adult Competencies (PIAAC), which, though not directly related to higher education, identifies the skills of a country's adult population and what they can do with them.

The programme analyses similar skills to the PISA tests, but with a focus on how adults acquire, use, develop and benefit from their skills. Countries could find the results very useful for developing educational, economic and social policies to improve their skills. A central message of the first PIAAC report is that what people know and what they can do with it have a major impact on their life chances (OECD, 2013e). For example, the median hourly wage for individuals with high skill levels is 60% higher than for individuals with low skill levels, who are also twice as likely to be unemployed.

The expansion of tertiary education in the region has not always been accompanied by improvements in quality.

Various factors explain the low quality of tertiary education, some of which are results of its rapid recent expansion. The factors include more students with a lower economic, social and cultural status; a shift towards a more teaching-based, rather than research-based, model; the emergence and rapid expansion of higher-education institutions (HEIs) that have lowered quality requirements and often hired poorly trained teachers; a certain commercialisation of tertiary education, with some universities

admitting students purely based on their capacity to pay (Brunner and Ferrada, 2011; Aedo and Walker, 2012).

Evaluation and accreditation systems are therefore essential to guarantee the quality of higher-education systems. Quality levels depend strongly on quality measurement, evaluation and accreditation capacities. Although the number of evaluation agencies has grown in the region, there is still plenty of room for improvement. Accreditation models must be broadened to cover the wide range of HEIs and institutional models, improve the qualifications of assessors and strengthen quality-control procedures.

Better quality will require better accreditation and follow-up procedures.

Given the internationalisation of higher education, accreditation is particularly important to ensure the quality and equivalence of diplomas. Regional co-operation in this area is particularly important, and the RIACES initiative (Ibero-American Network for Quality Accreditation in Higher Education) is an interesting example. A good example of the region's limitations in the area of accreditation systems can be found in Colombia, where quality requirements are low and where only 7% of universities were accredited by the country's excellent accreditation system in 2012 (OECD/IBRD/World Bank, 2012).

Other aspects that determine quality are related to the governance and university-management models and the quality of teachers. University governance models often reinforce endogamy and decisions based on vested interests, significant factors behind the poor quality of higher education in Latin America (Bernasconi, 2013). Several countries have more flexible university-management models, with regulatory frameworks that encourage dynamism and innovation (Salmi, 2013).

Another key aspect is related to teacher training. The teaching profession shows some limitations and shortcomings. Many teachers do not have postgraduate training, have little pedagogical training or earn low wages with poorly designed incentive schemes (Brunner and Ferrada, 2011). In the Dominican Republic, for example, quality has been identified as a central challenge for higher education. Efforts to improve teacher training must be a priority, with tougher selection criteria for the teaching profession, updated training procedures and incentives to make the profession more attractive for talented individuals (OECD, 2012a).

Dropout rates are an additional challenge for tertiary education. The region has low gross graduation ratios from first degrees: 12% in Argentina, 14% in Colombia, 18% in Venezuela, and 19% in Chile and Mexico. Costa Rica (37%) and Cuba (51%) have much higher rates.[15] These ratios underline the education system's weaknesses in training and retaining higher education students. Tertiary education enrolment is affected by the opportunity cost of work income and low household savings. Furthermore, the poor quality of some institutions means that students are not of a high enough standard to remain in tertiary education. Finally, the limited visibility or poor reputation of other types of education (technical and vocational) may increase the mismatch between students and programme type, raising dropout levels.[16]

Three inequality factors persist in education and in labour-market access: socio-economic background, gender, and rural vs. urban areas

Three main inequality factors affect educational access and performance among society's most vulnerable sectors, and later affect their labour-market integration: inequalities due to socio-economic status, gender, and rural vs. urban areas.

Socio-economic inequalities affect student access and performance

Not all students have the same opportunities in education, especially those with a lower socio-economic status. Education spending affects the various socio-economic groups differently and can have a highly significant distributional impact. Education services are in strong demand from the region's new emerging "middle classes", on whom education spending has a particularly large impact, given their size and the fact that many of their members are still relatively vulnerable (Box 4.3).

Box 4.3. What impact does public spending on education have on Latin America's middle class?

We often hear that Latin America is now a *middle-class region*. Although definitions of the term vary (see a comparison of the terms "middle class" and "middle sectors" in OECD, 2010b; and more recently in Ferreira et al., 2013), the drastic reduction in poverty and inequality is undoubtedly creating socio-economic groups with higher demand, more sophisticated consumer preferences and new social aspirations.

However, the social transformation driven by the rise of these new middle classes is exposed to risks. There is growing evidence that many individuals who escape poverty remain far from the definition of middle class as someone who has a stable, formal job (Banerjee and Duflo, 2008). On the contrary, they are often highly vulnerable to the effects of job loss, illness or old age, among other risks. Education is one of the main aspirations of this new middle class, not only because education is associated with more stable income but also because it increases people's social mobility.

This box presents some of the results of the Commitment to Equity (CEQ) project. Headed by Nora Lustig, the CEQ is an initiative organised by Tulane University, the Center for Global Development and the Inter-American Dialogue, With the help of local researchers, the project seeks to analyse the impact of taxes, transfers and public services (especially healthcare and education) on inequality and poverty in emerging economies (Lustig and Higgins, 2013).[17]

This box presents the results of the trials by Lustig, Pessino and Scott (2014) and other working papers by CEQ and an extension of the CEQ project supported by the Labor Markets and Social Security Unit of the IDB and the OECD Development Centre. The project classifies households into socio-economic groups, as defined by Ferreira et al. (2013): poor (daily income of less than USD 4 per capita), vulnerable (USD 4 to USD 10), middle-class (USD 10 to USD 50) and upper-income (more than USD 50). The analysis specifically focuses on those who form the middle sectors of the population, i.e. the vulnerable and middle class in the above classification. The results are summarised using two indicators: the distribution of total spending on education broken down by socio-economic group, and the redistributive impact of this spending for each group, measured as a proportion of their market income.

Box 4.3. **What impact does public spending on education have on Latin America's middle class?** (*cont.*)

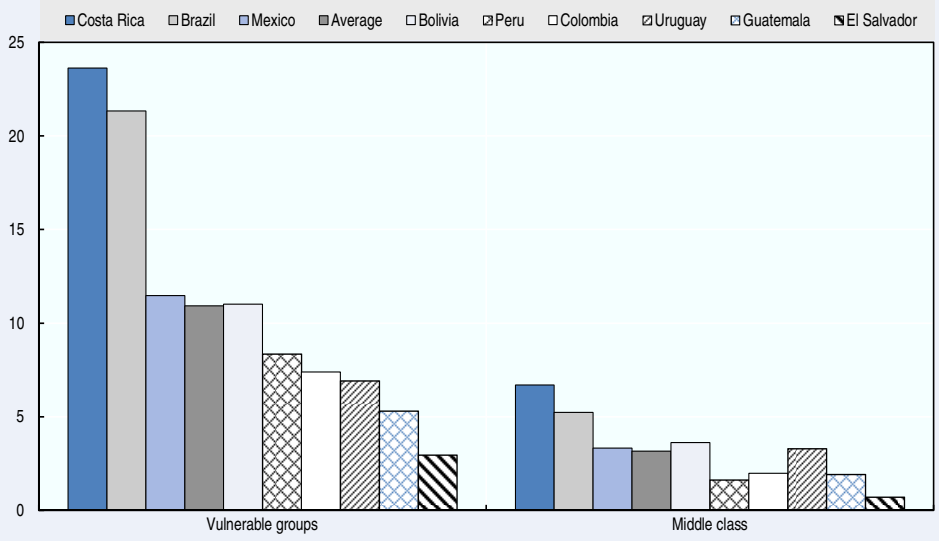
There are marked differences from one country to another in the distribution of educational spending among the middle sectors. In El Salvador, Mexico, Bolivia and Peru, the vulnerable group receives more than 40% of education spending, above the regional average of 36%. At the other extreme is Uruguay where the vulnerable group receives only 22%, less than in any other country in the region. This contrasts with education spending for the middle class, where Uruguay comes out on top (63%), well ahead of Costa Rica (51%); the middle class receives the lowest share in Guatemala (11%) and El Salvador (14%), well below the regional average of 29%. This variation among the countries is greater for the middle-class share than for the vulnerable-group share, largely because the relative size of the middle-class varies greatly from one country to another in Latin America.

Regarding the distributional impact, which takes into account both the distribution and size of the socio-economic groups, as well as their income, education spending raises the income of the vulnerable group by 11% on average and that of the middle classes by 3% on average. The countries in Latin America fall into four groups (Figure 4.7) based on the impact of education spending on the middle statuses: the high-impact group, formed by Costa Rica and Brazil, in which the increase exceeds 20% of income; the average-impact group, formed by Bolivia and Mexico; the medium-low impact group, formed by Peru, Colombia and Uruguay; and the low-impact group, formed by El Salvador and Guatemala. For the middle class only, Brazil and Costa Rica are still the countries where education spending has the highest distributional impact. The impact on the middle class is average in Bolivia, Mexico and Uruguay, while it amounts to less than 3% of income in the remaining countries.

This significant distributional impact of government education spending is mainly thanks to primary education in the vulnerable group and tertiary education in the middle class (which accounts for almost half of the distributional impact). Secondary education also has a significant distributional impact on both groups, but not to the same extent as primary and tertiary education.

Figure 4.7. **Distributive impact of public spending on education on Latin America's middle statuses**

(% market income)



Source: Authors' work, based on the extension of the CEQ project.

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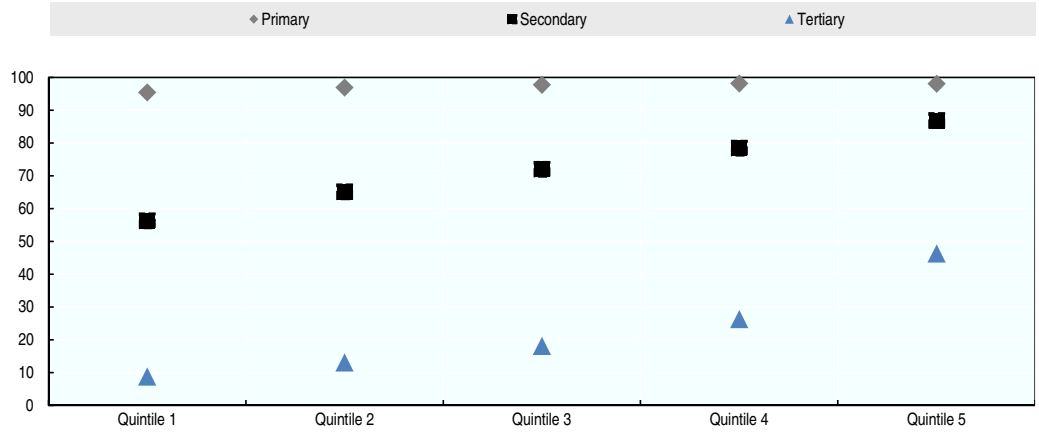
There are major disparities in enrolment rates, which become greater at higher levels of education and vary according to income and sociocultural aspects such as the indigenous and Afro-descendant population. Although income distribution has little effect on enrolment in primary education, it has a substantial effect on enrolment in secondary and tertiary education. In Latin America, nearly half of students in the fifth income quintile continue into university, but in the first quintile only one in ten students does so (Figure 4.8).

Access to education varies by income in all countries in the region, but access by type of school (public vs. private) and level of education (see Rossetti, 2014 for a summary comparing the figures among the countries) vary greatly according to income. Furthermore, income-based segregation between public and private schools has been growing since the 1990s (Arcidiácono et al., 2014).

Figure 4.8. **Net enrolment rates by income quintile in Latin America (%), 2011**



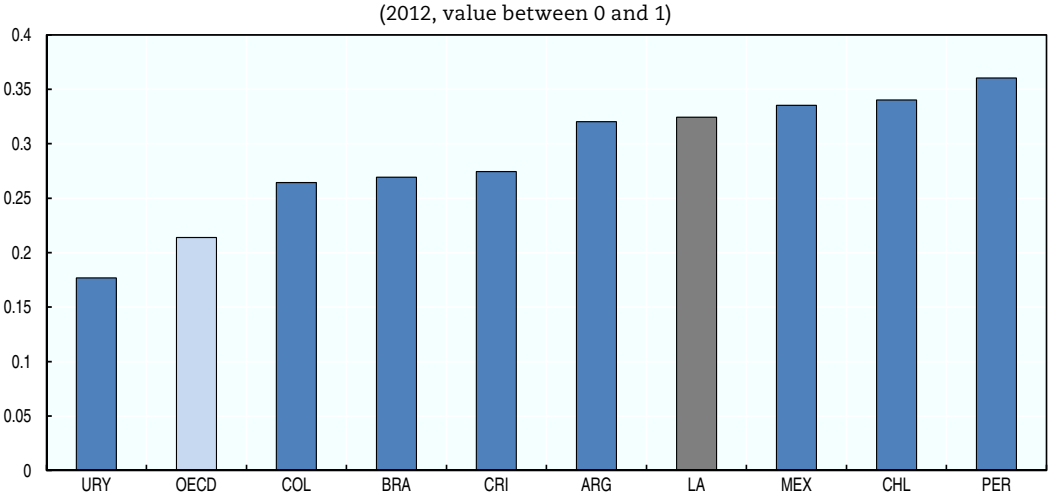
Note: Fifteen Latin American countries included, which vary for each level of education. For the seven largest Latin American economies, no data is used for primary education in Brazil or any level of education in Venezuela.
Source: SEDLAC (SEDLAC and World Bank), 2014.
StatLink http://dx.doi.org/10.1787/888933174518

Economic disadvantages not only affect access but also student performance. As mentioned at the beginning of this chapter, the socio-economic status of the student and the school account for around 30% of the performance variation of secondary-school students in Latin America. Educational infrastructure levels and access to basic public services are strongly correlated with the socio-economic level of students and schools. The correlation between a student's socio-economic status and the educational resources of his or her school is much stronger in Latin America than in the OECD economies (Figure 4.9). The most disadvantaged schools have severe shortages of basic services such as access to drinking water, electricity and toilets, which diminishes the quality of learning (Duarte, Gargiulo and Coreno, 2011).

Another aspect linked to a school's socio-economics status is the school climate. A friendly climate among classmates and mutual respect between teachers and students are associated with higher achievement in Latin America (Treviño, 2010). Therefore, instead of creating a more equitable distribution of learning opportunities and more favourable educational results, schools tend to reproduce existing socio-economic inequality patterns.

Figure 4.9. **Correlation between the quality of schools' educational resources and students' socio-economic status**

(2012, value between 0 and 1)



Note: Latin America ("LA") comprises Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay. "Schools' educational resources" refers to aspects such as scientific laboratory equipment, instructional material, computers, software, Internet connections and library material.

Source: Authors' work based on OECD/PISA 2012 database.

StatLink http://dx.doi.org/10.1787/888933174520

Another crucial aspect affecting performance and equal access is Latin America's cultural and linguistic diversity. These cultural differences may put some students at a disadvantage, increasing their likelihood of not enrolling, repeating grades or dropping out. Peru, for instance, has a mathematics performance gap equivalent to more than two years of schooling, between students who report speaking Spanish at home and students who report speaking Quechua. This negative impact remains significant even after controlling for the economic, social and cultural status of the student and the school.[18] The development of intercultural and bilingual education programmes is vital in the region to combat this type of inequality and raise the performance of the most disadvantaged students.

The experience of OECD countries shows that quality and equity are not mutually exclusive.

The PISA 2012 results corroborate that better quality can accompany greater equity. The results show that some OECD countries and some emerging economies improved mathematics performance without increasing inequities. Moreover, in Mexico, performance improved between 2003 and 2012, as did equity as per both PISA definitions: the performance gap between the two ends of the socio-economic spectrum decreased (from 60 to 38 points, which is equal to less than one year of schooling) and the proportion of the variation explained by students' socio-economic status (down from 17% to 10%).[19] During the earlier 2000-09 period,[20] Chile also improved both its performance (by three points per year) and its equity (performance gap down almost 10 points).

However, not all countries in the region were able to improve both performance and equity. Argentina, Brazil and Peru improved their average performance but failed to reduce socio-economic inequalities. In Uruguay, meanwhile, both performance and equity deteriorated, with the performance variation explained by students' socio-economics status increasing from 16% to 23%. Finally, in Argentina, Colombia and Peru, 25% of students in the lowest socio-economic category failed to achieve the minimum

skill level, defined as the ability to answer questions involving familiar contexts or carry out routine procedures according to direct instructions.

Latin America still has one of the lowest levels of social inclusion in the world, defined as the proportion of students of different economic, social and cultural statuses enrolled at the same school. Raising the level of social inclusion is one of the most efficient ways of boosting equity, because the classroom climate can be a key source of motivation and engagement (OECD, 2012b). The level of social inclusion worsened in Mexico and Uruguay between 2003 and 2012. They join Brazil as the three countries in the region with the lowest levels of social inclusion among participating countries. These results confirm that economic, social and cultural status still plays a major role in determining the type of school in which students enrol.

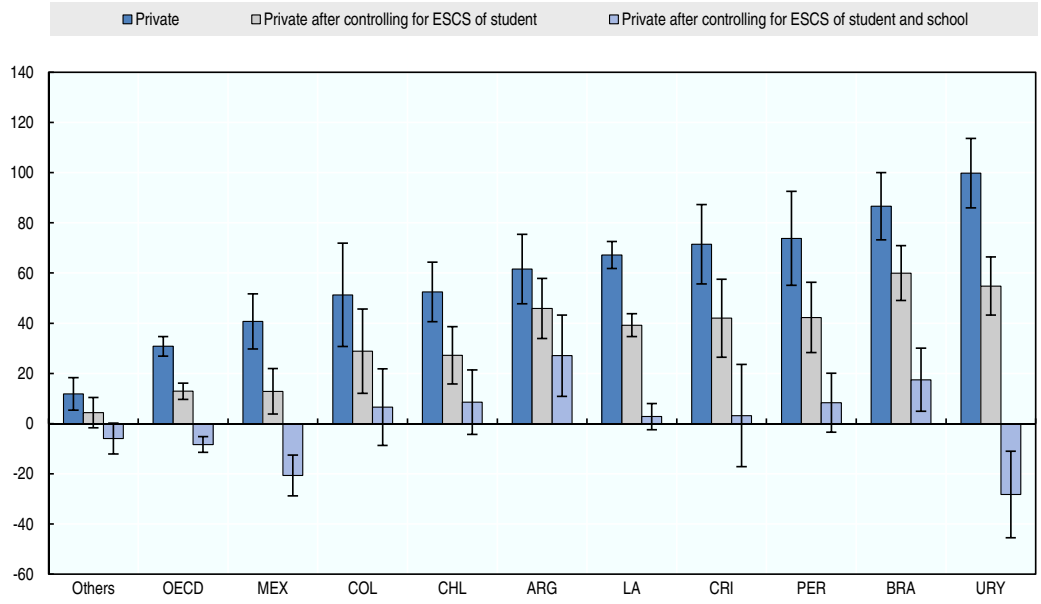
Students' economic, social and cultural status largely explains the performance gaps between public and private schools.

It is these socio-economic disadvantages that explain why private schools perform better. After adjusting for the economic, social and cultural status of parents and schools, private schools performed no better than public schools (Figure 4.10). In fact, in two countries in the region – Mexico and Uruguay – public schools offer greater net value added than private schools. In addition, in Brazil and Mexico the performance gap between private and public schools narrowed between 2003 and 2012, both before and after controlling for the student's socio-economic status. In the OECD countries, however, the net value added of private schools increased.

Another analysis confirmed that the poorer performance of public schools is due to students' socio-economic statuses and schools' limited resources. However, efficiency frontier analysis suggests there may be some differences among countries (CAF, 2012). For example, Chilean public educational institutions can operate efficiently, but there is still an equality gap associated primarily with insufficient resources and students' socio-economic background. In Peru, although resource shortages and students with adverse socio-economic conditions partly explain the poor performance of public schools, there are other aspects related to efficiency (Álvarez-Parra, 2012). As in other emerging economies, better performance by private schools does not necessarily mean that those schools function efficiently (Banerjee and Duflo, 2011).

Policies to enable public schools to attract students from a more diverse range of socio-economic backgrounds and policies to provide public schools with more resources could improve equity and performance. Because of the socio-economic disparity between public and private schools and its effects on performance, public schools need greater attention. More students from different socio-economic backgrounds – a goal for various countries in the region – would help public schools to improve their performance, and could have positive externalities thanks to peer effects (Llaudet and Peterson, 2013).

Figure 4.10. **Performance differences between private and public schools**
(PISA points in mathematics, before and after controlling for the socio-economic status of students and schools)



Note: Latin America ("LA") comprises Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay. "Others" comprises Albania, Bulgaria, Croatia, Dubai, Hong Kong (China), Indonesia, Jordan, Kazakhstan, Latvia, Liechtenstein, Lithuania, Macao (China), Malaysia, Montenegro, Qatar, Romania, Russia, Serbia, Shanghai (China), Singapore, Chinese Taipei, Thailand, Tunisia and United Arab Emirates. The intervals show 95% confidence intervals. The dependent variable in the regression is student performance in the PISA test, and the explanatory variables are: a dummy variable equal to 1 if the school is private, the child's economic, social and cultural status (ESCS) and the school's ESCS.

Source: Authors' calculations based on OECD/PISA 2012 database.

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In tertiary education, disparities remain large despite significant recent progress in access. Additional access has not affected all economic groups equally, with performance in universities still strongly associated with factors such as income, family and educational setting, geographical location and ethnic group (ECLAC, 2011).

Tertiary enrolment rates for different income levels reveal the major inequalities that still exist. The poorest income quintile's enrolment rate remains below 10% in several countries, whereas the richest income quintile's rate is above 40% in most countries and above 50% in some.

Although university access has expanded in recent years, gaps remain, partly because the university system is split between a few elite universities and the rest, with the latter accounting for most of the increased access to higher education. In addition to access, there are also inequalities in graduation rates in tertiary education. The net graduation rate is 8.9% for 25-29 year-olds, but this figure rises to 27% for the richest income quintile and falls to 1% for the poorest. The latter often have to drop out because they need to work (SEDLAC, 2014). In terms of performance, the PIAAC test provides the first conclusions on inequality and skills in the OECD countries (see Box 4.4).

Box 4.4. The impact of the socio-economic background on skills in non-Latin American OECD countries

Skills in a range of fields such as mathematics, reading and problem-solving are essential for people to enter and successfully participate in the labour market. However, as acknowledged by most of the literature on the subject, including the PIAAC report (Programme for the International Assessment of Adult Competencies, OECD, 2013c), the skills that people acquire are conditioned by their socio-economic background. The PIAAC report looked at 16-64 year-olds in 24 countries and found that people from more advantaged socio-economic backgrounds perform better in tests than those from more disadvantaged backgrounds. The results showed that in countries like the United States, the United Kingdom, France and Germany, where socio-economic inequalities are greatest, there is a stronger relationship between socio-economic setting and skills. Conversely, where policies were introduced to improve access and quality in the education system, such as in the Nordic countries, this relationship has weakened, meaning that those from disadvantaged backgrounds are not predestined to low skill levels and to difficulties entering and participating in the labour market.

The OECD analysis does not yet include results for Latin America, but Round 2 will include Chile, with the results published in 2016, and Round 3 will include Argentina, Colombia, Costa Rica, Ecuador, Mexico and Peru, with results published in 2018.

Source: OECD (2013e).

The incorporation of ICTs into education brings new opportunities to promote equity, but also new risks. ICTs are playing an ever greater role in the education system, and in recent years they have been introduced into tertiary education and into the teaching and learning processes. They provide new opportunities in terms of access to education. However, because access to ICTs varies among different socio-economic groups (the "digital divide"), many are alienated from the opportunities they bring and denied the benefits of higher education, and so the existing inequalities grow. In 2008, 25.2% of households in the region's richest income quintile had Internet access, compared to 1.2% of households in the poorest income quintile (Kaztman, 2010).

Furthermore, the incorporation of ICTs into higher education has not yet become widespread. Where they have been used, it has been to improve management mechanisms, and they have done little to transform teaching methods (OECD, 2014b).

However, greater social inclusion outside school requires solutions that are more complex and that affect the social and cultural behaviour of societies. Increased performance in education for all is not enough to ensure equal employment conditions in the labour market. Belonging to a certain social network has a significant impact on labour-market integration and salaries. In Chile, for example, business and economics students who graduate from the same university with similar grades will earn salaries that differ by 25% to 35%, depending on the graduate's socio-economic background (Núñez and Gutiérrez, 2004). Although there does not appear to be any discrimination associated with people's names and places of residence during the initial hiring stages (Bravo, Sanhueza and Urzúa, 2008), there may be discrimination in subsequent stages or in wage setting.

Inequalities between rural and urban areas are due to countries' socio-economic factors

In Latin America there are vast inequalities in education skills between urban and rural areas. There are inequalities in enrolment rates between socio-economically advantaged and disadvantaged regions within a single country. This mismatch between schools and students is compounded by the smaller number of schools and less diverse programmes in rural areas. The performance gap between urban and rural schools is twice as wide in Latin America as it is in the OECD countries (Figure 4.11). Brazil, Chile, Peru and Uruguay have performance gaps of more than 70 PISA points, the equivalent of almost two years of schooling. These rural-urban comparisons reveal major differences between Latin American and OECD countries.[21] The infrastructure gap between rural schools (defined as those in areas with less than 3 000 inhabitants) and urban schools is 12 times greater in Latin America than in the OECD countries.

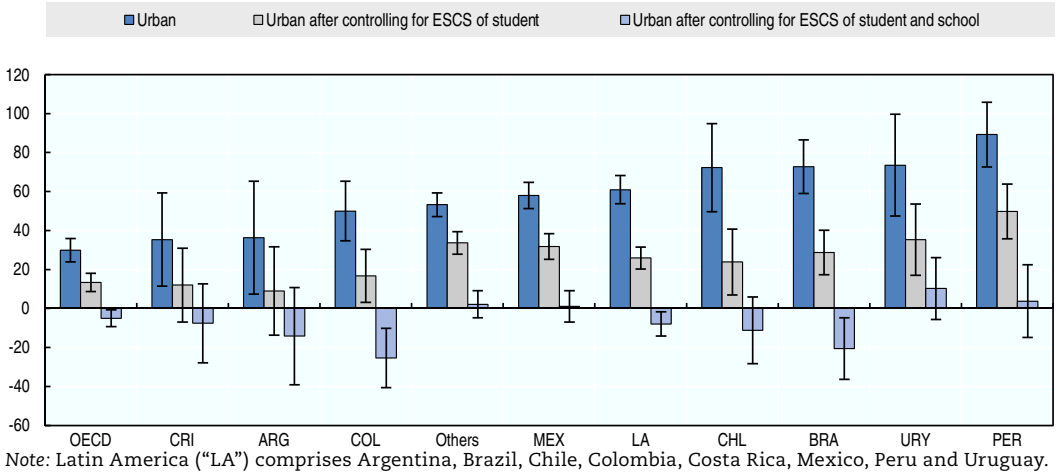
Similarly, the quality of educational resources (computers, laboratories, books and technologies) is six times greater in urban areas than in rural areas in Latin America.[22] Rural schools suffer from serious shortcomings, in both school infrastructure and access to basic public services. This suggests the need for targeted public interventions to improve student conditions in more remote areas and ensure equitable access to good-quality education (Duarte, Gargiulo and Moreno, 2011). Rural schools are considerably less well equipped than urban schools, harming their performance.

Performance differences are also visible within towns and cities. The large income inequalities in Latin America's urban areas are reflected in the substantial performance gaps of students within the same town or city. There are vast performance differences between schools that are located very close together, so instead of tackling inequality, education actually contributes to it. For instance, at schools within a kilometre of San Borja Sur metro station in Lima, 70% of students in the second grade of primary school can understand what they read, but at schools near Parque Industrial station – a 20-minute metro ride away – the figure falls to 30%. Moreover, these differences grew between 2007 and 2012 (Ñopo, 2014). Similar results can be observed if we ride the Santiago Metro, confirming a high intergenerational transmission of poverty and inequality (Echenique and Urzúa, 2013). The high correlation between household income and student performance in urban areas – with large performance gaps between schools that are close together – underlines the need for more inclusive policies.

Reducing the contribution that geographical location makes to student performance requires a series of measures that go beyond dealing with the quality of schools. After controlling for the socio-economic background of students' parents and schools, rural schools actually perform better in some countries in the region, even outperforming the OECD average (Figure 4.11). So, much of the better performance by urban schools is explained by the better socio-economic situations in certain regions due to wealth inequalities.

Indeed, the Gini coefficients in GDP per capita are much higher for Latin American countries than for the OECD countries. The Gini index for the OECD is 16%, well below the indices for Brazil (29%), Colombia (31%), Chile (35%) and Mexico (35%) (OECD, 2013f). Socio-economic differences due to geographical location are also reflected in the education system. In Latin America, 78% of students in rural areas are enrolled in socio-economically disadvantaged schools, compared with 41% in the OECD countries. Furthermore, 45% of students in urban areas (municipalities with more than 100 000 inhabitants) in Latin America come from socio-economically advantaged settings, compared with only 38% in the OECD countries.[23] Regional disparities must therefore be addressed by integral policies and education policies that boost regional development and reduce geographical disparities.

Figure 4.11. **Performance differences between urban and rural schools**
(PISA points in mathematics, before and after controlling for the socio-economic status of students and schools)



Note: Latin America ("LA") comprises Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay. "Others" comprises Albania, Bulgaria, Croatia, Dubai, Hong Kong (China), Indonesia, Jordan, Kazakhstan, Latvia, Liechtenstein, Lithuania, Macao (China), Malaysia, Montenegro, Qatar, Romania, Russia, Serbia, Shanghai (China), Singapore, Chinese Taipei, Thailand, Tunisia and United Arab Emirates. The intervals show 95% confidence intervals. The dependent variable in the regression is student performance in the PISA test, and the explanatory variables are: a dummy variable equal to 1 if the school is located in an urban area with a population of more than 100 000 and 0 if the school is located in a rural area with a population of less than 3 000; and the economic, social and cultural status (ESCS) of the student and that of the school.

Source: Authors' calculations based on the OECD/PISA 2012 database.

StatLink http://dx.doi.org/10.1787/888933174546

Gender inequalities persist at all levels of education and in the workplace

Despite recent progress, gender inequalities in education remain a challenge for the region. Universal coverage for primary education has brought gender parity. In general, there is equal enrolment of girls and boys in primary schools, unlike in other emerging regions such as sub-Saharan Africa, the Arab States, South and West Asia and East Asia and the Pacific, where there is higher enrolment among boys than girls. The only exception is the Dominican Republic, one of only 15 countries in the world where boys are at least 10% more likely to be enrolled in the first grade of primary education (UNESCO-UIS, 2011).

In Latin America, boys still drop out of school or repeat grades far more often than girls. Primary- and secondary-school boys are both more likely to repeat a year than girls. In primary education especially, the difference between male and female dropout rates is far greater in Latin America and the Caribbean than in the OECD countries. In 2012, in the OECD countries there was hardly any difference between the repetition rates for boys and girls in primary education, but in Latin America and the Caribbean the rates for boys are more than 45% higher.[24]

Unlike in other developing countries, in secondary and tertiary education there is a lower enrolment rate for males than for females, confirming a reversal of the trend in primary education. This trend has been increasing in the region in recent decades, with the gap between female and male enrolment rates reaching more than five percentage points in secondary education and more than 16 percentage points in tertiary education by the end of the 2000s (UNESCO-UIS, 2012). In Argentina, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Honduras, Nicaragua, Panama and Venezuela, the gender gap for completion of secondary education is more than 10 percentage points (Rico and Trucco, 2014).

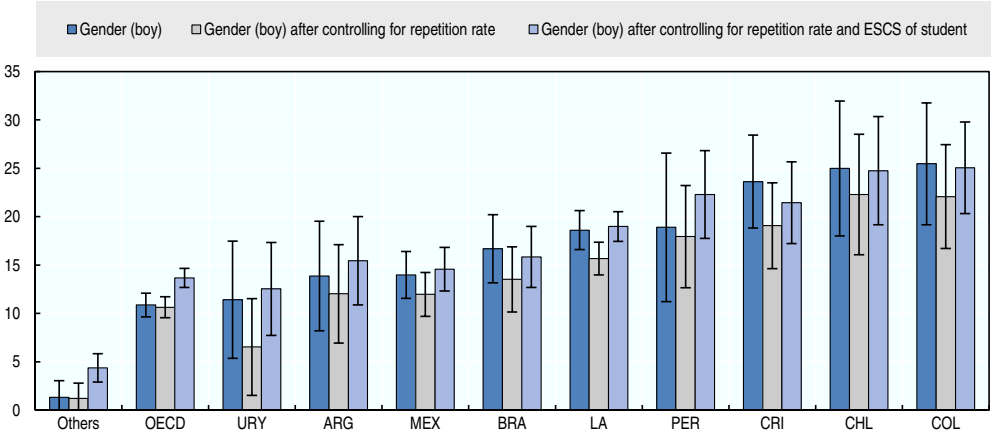
The performance gap between boys and girls in Latin America is greater than in the OECD countries. In PISA 2012, boys outperformed girls in mathematics by an average of more than 19 points – equal to half a year of schooling – compared with 11 points in the OECD countries. This performance gap in favour of boys has increased over the past ten years in Brazil and Mexico, but remained the same in Uruguay, as well as in the OECD countries.

When socio-economic variables are included for the student or the school, gender differences remain significant, implying an association between gender and performance irrespective of the socio-economic level of the parents or the school. These differences increase when controlling for student repetition rates (Figure 4.12).

The lower dropout rate for girls explains the better performance by boys.

Similarly, in the reading test, girls outperformed boys by 27 points in Latin America (equal to almost eight months of schooling) and 38 points in the OECD countries. Extensive literature stresses that key factors behind these gender-based performance differences in mathematics and reading are people's different beliefs in the children's abilities in the respective subjects and the children's own self-belief. It is therefore essential to develop teaching strategies that seek to reverse gender-based inequalities (Bellei et al., 2013 and OECD, 2012c).

Figure 4.12. **Performance differences between boys and girls**
(PISA points in mathematics, before and after controlling for repetition and the socio-economic status of students)



Note: Latin America ("LA") comprises Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay. "Others" comprises Albania, Bulgaria, Croatia, Dubai, Hong Kong (China), Indonesia, Jordan, Kazakhstan, Latvia, Liechtenstein, Lithuania, Macao (China), Malaysia, Montenegro, Qatar, Romania, Russia, Serbia, Shanghai (China), Singapore, Chinese Taipei, Thailand, Tunisia and United Arab Emirates. The intervals show 95% confidence intervals. The dependent variable in the regression is student performance in the PISA test, and the explanatory variables are: a dummy variable equal to 1 if the child is a boy, the number of repeated years and the child's economic, social and cultural status (ESCS).

Source: Authors' calculations based on the OECD/PISA 2012 database

StatLink http://dx.doi.org/10.1787/888933174552

The better performance by boys is partly explained by the high dropout rate among boys from poorer socio-economic backgrounds. These students also tend to be the poorer performers, so when they drop out it introduces a selection bias in the boys that sit the exams. In some countries, the differences in dropout rates by socio-economic status are greater than in others. In Chile, for instance, 65% of boys in the lowest income quintile complete secondary school (compared with 95% of their male

peers in the highest income quintile), but in Guatemala, only 10% of boys in the lowest income quintile complete secondary school (compared with 60% of their male peers in the highest income quintile).[25] Colombia's 2012 PISA results are noteworthy in that it has the largest performance gap between boys and girls in mathematics and one of the smallest performance gaps between girls and boys in reading. However, the seemingly better performance by boys vanishes when the performance of those who dropped out of school is taken into consideration (Muñoz, 2014).

Similarly, in some countries in the region the gender performance gap can also be explained by the fact that violence is much more prominent among boys, especially the poorest teenagers living in urban areas. Youth violence and homicide rates in Latin America and the Caribbean are higher than in all other regions (Muggah and Aguirre, 2013). In South and Central America, the homicide rate for male victims aged 15-29 is more than four times the global average for that age group (UNODC, 2013). In Colombia, where the school performance gap between boys and girls is the highest, violence is associated with male school dropout (Gerardino, 2014).

This violence harms incentives to invest in education through various channels. First, it increases the opportunity cost of education, because violence involves men more than women, and second, it reduces life expectancy and perceived safety among men. In addition, the violence can indirectly affect all students, making them afraid to attend classes when violence is present even in school. In some countries, this factor can affect dropout rates and educational quality.

Even when girls perform as well as boys in mathematics, they report less motivation to learn the subject and less belief in their own skills. The gender gap in favour of boys is even greater among the highest-performing students. This has serious implications for higher education: young women are already under-represented in science, technology, engineering and mathematics degrees, as well as after graduation, when they enter the labour market. These identified factors thus create and expand the gender gap in education, employment and entrepreneurship. Positive attitudes to support girls and investment in mathematics learning could help to close this gap (OECD, 2012c).

Although integration of women has improved, gender inequalities extend into the labour market.

Because more women now enrol in secondary and tertiary education than before, there are more women in the workplace, especially women with higher socio-economic statuses. Globally, the female labour-force participation rate dropped from 57% to 55% between 1990 and 2012, while in Latin America and the Caribbean it steadily grew from 43% to 60% during the same period. In addition, regulation has encouraged female participation in the labour market, halving the number of discriminatory restrictions in the last four decades (World Bank, 2014). However, this positive trend has primarily been in the upper socio-economic levels. At the lower levels, various restrictions and conflicts remain.

Some key challenges remain to improve the position of young women in the labour market. First, the proportion of 20-29 year-old women in low-productivity sectors is greater than 70% (vs. 56% for men of the same age), which shows that labour-market integration for women needs to improve (Rico and Trucco, 2014). Second, the total number of hours worked by women is far greater than the number worked by men, mainly because of the high proportion of hours worked by employed women in unpaid domestic work (ECLAC, 2013). Third, youth unemployment for 15-24 year-olds is still around six percentage points higher among women than among men, whereas in the OECD there is no significant difference. Women's wages, meanwhile, have improved in

recent years, and in some countries they represent a higher proportion of men's wages than the OECD average. However, they remain at only 90% of men's wages, a figure that cannot necessarily be explained by fundamentals such as work experience and level of education (World Bank, 2014).

Education policies in Latin America must deal with major challenges

Recent education policies have addressed school autonomy, changes in the management model, the strengthening of evaluation and the professionalisation of teachers.

Educational reforms have sought to respond to traditional challenges related to enrolment rates as well as new challenges related to relevance and adaptability. Previous *Latin American Economic Outlook* reports have described some of the major education reforms introduced in the region in recent decades (OECD, 2011). First, education systems have been decentralised to improve performance, giving schools, local authorities and regions greater autonomy in areas such as hiring teaching staff, financing, scheduling school hours and setting targets. Second, changes have been made to the management of tertiary education, leading to greater private funding and new quality criteria, which has resulted in greater differences among universities. Third, evaluation systems have been introduced and strengthened, providing better insight into the dynamics of education systems and improving how student performance and teaching practices are measured. Fourth, changes have been introduced to the hiring, management and professional development of schoolteachers and principals.

In recent years, education reforms have sought to respond to both "traditional" challenges and "new" challenges that have emerged. Most countries in the region are still conducting reforms in the four traditional areas: enrolment rates, quality, equity and relevance. However, recent policies have also dealt with new challenges in areas such as early education, the relevance of education programmes and adaptability to labour-market needs.

Significant long-term challenges lie ahead for education policy, but the current climate of fiscal tightening requires short-term solutions that make better use of existing resources to deal with the most immediate challenges. These policies include, as discussed below, support programmes to reduce repetition and dropout, school tutoring programmes, some incentives for the teaching profession, and the strengthening of soft skills in school curricula and of information systems in tertiary education.

Although Latin America's long-term challenges will not lead to immediate results, they must be an essential part of education programmes. These challenges include policies for early education, including increasing the enrolment rate and creating programmes to train up skilled staff. They also include priority policies in several countries, such as full-time schools, teacher training systems and the introduction of evaluation systems.

The region's traditional education challenges are therefore accompanied by new areas of action that must structure the new education policy agenda. The next section presents the main areas that form this new agenda. It describes some of the recent reforms introduced by countries in the region and the experience of the OECD countries, and it makes recommendations. Annex 4.A1 presents a summary of the main policy recommendations in this chapter.

The new agenda for education policies should focus on quality and equity

Although OECD member countries do not share a single educational model, there is now a certain consensus regarding the most effective education policies. International experience points to a set of policies that affect quality and equity and contribute to defining a new agenda for Latin America: *i)* early-education policies, which cover challenges such as improving enrolment rates, training professionals for early education, and placing a greater emphasis on the development of non-cognitive skills in the curriculum, among others; *ii)* equity-focused policies such as programmes to support struggling students, new technologies, and new partnerships with the private sector; *iii)* classroom policies that seek to develop a disciplinary framework for training and encourage qualities such as motivation and perseverance; *iv)* strengthening the teaching profession, which is still a priority for the region and includes continuing training policies, teacher development and peer learning; and *v)* the development of internal, national and international evaluation and monitoring systems.

Early-education policies require medium- and long-term measures.

Essential for people's development and labour-market integration, early-education policies are now a priority. As explained in this chapter, several studies have highlighted the fact that people who receive early education perform better in the future, are less likely to drop out of school, and tend to have better cognitive skills. Early education therefore contributes to a more integral human capital (Cunha et al., 2005). Policies to increase enrolment in early education should therefore be strengthened, including aspects such as developing schools' and institutions' infrastructure. Other short- and medium-term measures are also important. The policies implemented in the region in recent years, which must remain a priority, include facilitating flexible childcare options so that more children have access to early education and more women can work. These policies also aim to increase the time people spend in education and improve staff training schemes in early-education centres.

Policies for equity and inclusion

Vast inequalities still remain in education, as seen throughout this chapter. Policies to address this have been stepped up and must remain a central part of education policy. Success stories in the region abound. In Brazil, the *Alvorada* project (initiated in 2001), the *Bolsa Escola* school-allowance programme and the National Partnership to Strengthen Secondary Education (*Pacto Nacional pelo Fortalecimento do Ensino Médio*) focus on reducing regional inequalities. The *Brasil sem Miséria* anti-poverty programme, launched in 2011, focuses on access to public services such as education and technical and vocational training. In Colombia, conditional cash transfer programmes such as *Familias en Acción and Estrategia de Cero a Siempre* seek to improve the quality of early-childhood programmes. The use of technology has made an important contribution to equity in some countries. In Argentina, the *Conectar Igualdad* programme has distributed computers among secondary-school students and teachers and provided teacher training. In Uruguay, the *Plan Ceibal* has made access to computers in public primary schools almost universal. In Mexico, two distance-learning schemes for undergraduate degrees – *Telebachilleratos Comunitarios and Bachillerato en Línea* – seek to improve inclusion among sectors of society with less access to education (e.g. adults, rural areas) by forming virtual learning communities.

Progress in the area of equity depends largely on the coherence and consistency among different education policies.

Education policies for equitable access and performance in the school systems need to be more coherent. The performance equity issues in school systems have been raised repeatedly in reference to Latin America, where socio-economic background, geographical location, ethnicity and gender significantly affect performance. In some countries, measures to improve performance have actually exacerbated inequalities, as shown by experiences in which different curricula are used for students with different ability levels, origins or motivation levels (Cox and Schwartzman, 2009). Curriculum differentiation between academic education on the one hand and vocational and technical education on the other (see Box 3.4, Chapter 3) has sometimes had an adverse effect in some countries, given vocational schools' poor reputation in the region. Coherent education policies also depend on better monitoring and follow-up.

Partnerships with the private sector, particularly with philanthropists, have improved educational access and equity. In Brazil, the experience of the *Instituto Ayrton Senna* (IAS), which benefits almost 2 million disadvantaged children and young people in 1 200 municipalities throughout the country, is an example of successful collaboration between the public sector and philanthropy to promote equal opportunities (OECD netFWD, 2014). The organisation's *SuperAção* programme seeks to develop soft skills (communication, trust, teamwork) and cognitive skills among secondary-school children to improve their integration into the labour market and society (OECD, 2013i). The training provided to teachers through the programme benefits the schoolchildren, who improve their skills in mathematics, literature and logical reasoning for problem-solving. According to impact evaluations, the improvements in student success rates in Brazilian schools between 1996 and 2006 were almost 3 percentage points greater in municipalities participating in at least one IAS programme than in the country as a whole.

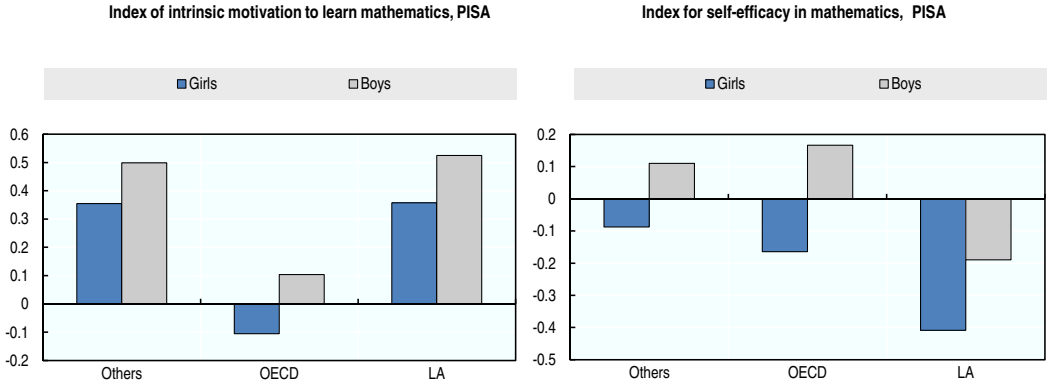
Classroom policies are highly effective and promote values such as motivation and perseverance.

Classroom policies have become more important in recent years because they are highly effective, with observable impacts in various contexts. They foster a solid learning environment and are essential not only to implement policies that provide support to struggling students and self-evaluation mechanisms, but also to boost qualities such as motivation among students. However, classroom policies in Latin America must strike a better balance between motivation and performance. Although indices for happiness at school, perseverance, openness to problem-solving and intrinsic motivation to learn mathematics are higher among Latin American students than among OECD students, Latin American students have a lower capacity to solve specific problems, as indicated in the index for self-efficacy in mathematics in the PISA test (Figure 4.13). The students' motivation, perseverance and happiness could therefore be better utilised through more stringent and more demanding classroom policies that convert these qualities into better performance (see Box 4.5).

It is also important to continue developing policies to reduce violence in schools, which would boost students' learning capacity and their integration into society. Proactive mechanisms like dialogue and participation in social relations support the psychosocial and human development of children and young people (Krauskopf, 2006). The *Paz nas Escolas* programme in Brazil and the *Habilidades para la Vida* programme in Colombia already reduced student violence in schools in their respective countries. Adapting prevention programmes from OECD countries to countries in Latin America and the

Caribbean could be helpful. For instance, the Bullying Prevention Program in the United States and the *Sevilla Anti-Violencia Escolar* programme in Spain have changed students' interpersonal relationships in order to foster co-operation and solidarity. Similarly, programmes to develop upper-secondary school students' socio-emotional skills such as *Construye T* in Mexico have sought to train teachers to understand the importance of identifying their own emotions, empathising with others and strengthening decision making.

Figure 4.13. **Student motivation and problem-solving effectiveness**



Note: Latin America ("LA") comprises Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Uruguay. "Others" comprises Albania, Bulgaria, Croatia, Dubai, Hong Kong (China), Indonesia, Jordan, Kazakhstan, Latvia, Liechtenstein, Lithuania, Macao (China), Malaysia, Montenegro, Qatar, Romania, Russia, Serbia, Shanghai (China), Singapore, Chinese Taipei, Thailand, Tunisia and United Arab Emirates. The INTMAT index measures students' intrinsic motivation for learning mathematics based on student responses to questions about their enjoyment of, motivation for, and interest in reading about, learning and doing mathematics. The mathematics self-efficacy index (MATHEFF) measures students' belief in their ability to resolve certain specific tasks, such as calculating a car's fuel consumption or the saving on a television with a 30% discount.

Source: Authors' work based on the OECD/PISA 2012 database

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A set of education policies to improve the conditions of the profession and guarantee the quality of teaching is essential.

Although policies for teachers have led to significant achievements in the region, there is still ample space for improvement. Policies for teachers have intensified in recent years in the region, and policy examples are plentiful. In Argentina, the National Teacher Training Institute (*Instituto Nacional de Formación Docente*) was created in 2007 for the institutional development of the training system and initial and continuing training for teachers. Brazil has implemented various training programmes for education staff, including the *Profuncionario* programme, which provides technical training, *Fundescola*, a maintenance and development fund for primary education, and the National Education Development Fund (*Fundo Nacional de Desenvolvimento da Educação*). Colombia's efforts have centred on mentor programmes for teachers. In Uruguay, discussions are currently under way to create a teacher-training university to address the dearth of teachers available in public education. Panama created the National Innovation and Curricular Update Team (*Equipo Nacional de Innovación y Actualización Curricular*, ENIAC) to keep the educational content up to date and implemented the *Entre Pares* programme (meaning "Between Peers") to train teachers in technology use. The Dominican Republic adopted a programme of full grants for future teachers studying programmes that focus on knowledge of the curriculum, innovative teaching practices, foreign languages and technology.

The professionalisation of the teaching profession should offer suitable incentives to have a significant impact on educational outcomes. An illustrative example is that of teacher certification, which does not always result in better student performance (see Box 4.2). To promote teacher certification systems that will boost the quality of education, it is essential to improve evaluation and design incentives for teachers. Although salaries remain an important factor, other incentives exist to improve teaching practice, such as time to prepare classes and interact with other teachers, professional development, support for non-certified teachers and flexibility. The experience in the OECD countries is a good example of certain teaching incentives that help the professionalisation of teaching to have a significant impact on performance (see Box 4.5).

Efforts to improve the quality of information and the monitoring of education systems must continue.

Better information systems have enabled better-targeted education policies. Academic performance indicators such as those developed in national and international evaluations have revealed areas in which the quality of education can be improved. Self-evaluation of educational institutions for training purposes also represents progress. Additionally, it is essential to evaluate and monitor programmes, because doing so provides a better understanding of their scope and improves their impact. In several countries, policies such as conditional cash transfer programmes, which affect school attendance, progression and completion, were successful thanks in part to evaluation (Baez and Camacho, 2011; Behrman, Parker and Todd, 2011). This type of evaluation provides important lessons on policy monitoring to measure effectiveness. The experiences in the OECD countries have enabled major steps forward in this area (see Box 4.5).

Box 4.5. **Some recent lessons in education policy in the OECD countries**

The recent experience of OECD countries in education policy suggests several areas in which Latin America could make progress, especially in early education and secondary education. These areas include policies on teaching, evaluation and vocational training, as well as classroom policies.

Early education has become a priority in many OECD countries. Most governments of OECD countries provide the lion's share of investment in early education and have adopted mechanisms such as direct financing, subsidy schemes and tax breaks to increase enrolment rates. They have also sought to improve the quality of early education. Some countries have sought to improve early-education curricula, with greater involvement of families and the community.

In secondary education, where many of the region's efforts are concentrated, various policy experiences have improved resource distribution, school autonomy, teacher training, school policies and evaluation policies in the education system (OECD, 2013d).

Various successful systems in the OECD have adopted an equity policy whereby more educational resources are allocated to the most disadvantaged schools. The best-performing OECD countries in the PISA tests tend to distribute educational resources more equitably, including Estonia, Finland, Germany, Korea and Slovenia.

Similarly, at the administrative level several countries have sought to balance autonomy with collaboration among teachers. The experiences in the OECD countries show that greater school autonomy is beneficial in high-performance systems. Schools in top-performing education systems tend to have greater responsibility in designing the curriculum and in evaluation. However, whether autonomy is beneficial depends on the quality of the education system, its transparency, and collaboration at the administrative level. For this reason, the results of school autonomy cannot be extrapolated to all countries (Hanushek, Link and Woessmann, 2011).

Box 4.5. **Some recent lessons in education policy in the OECD countries** (*cont.*)

In terms of education policies, several OECD countries have invested vast efforts in designing suitable mechanisms and incentives to attract and retain good-quality teachers. They have sought to adopt stringent recruitment procedures, make training ongoing for professional teachers, offer remuneration that is in line with each teacher's training and experience, acknowledge the work of the best employees and support those who need to improve. Successful school systems in the OECD have sought to balance the distribution of teachers, ensuring that struggling schools have enough of the more highly qualified teachers.

Classroom policies are acknowledged as being most effective (OECD, 2013d). A positive disciplinary climate is one of the conditions for improving performance, which shows the importance of attracting the best teachers to struggling schools. Moreover, the best education systems in the OECD countries seek to provide opportunities for all students. In fact, splitting students into groups based on repetition or skill level is negatively associated with equity and performance. Students in highly stratified systems tend to be less motivated.

In terms of evaluation policies, the experiences of the OECD countries show that it is helpful to include students and teachers in external-evaluation and self-evaluation processes, and to use the information for training purposes (OECD, 2013h). These measures also need to be extended beyond the confines of the classroom, and systems need to be developed to measure skills and abilities for labour-market integration. One policy that has successfully reduced repetition and dropout rates has been to improve the information systems that already exist in many countries so that struggling students can be identified.

Finally, OECD policies geared towards technical and vocational training have sought to improve the quality and relevance of such training. Various policies have sought to provide students with better support and careers guidance that is relevant to what they are studying. Providing early access to work experience, which is important for the development of hard and soft skills, has been a successful policy in some countries. Similarly, measures have been taken to close the gap in curriculum development through more fluid, balanced communication among teachers, employers and unions. Attracting teachers who are familiar with the labour market has also been an important policy to improve the quality of the system (OECD, 2010c).

The institutional experiences of the OECD countries are useful for policy implementation in Latin America

The implementation of education policies must consider both the institutional structure and the stakeholders. There is ample evidence to show which factors contribute to good-quality education (Hattie, 2008; OECD, 2013g). The consensus is even stronger – if not unanimous – regarding the most effective policies: those related to good-quality teachers, high standards and expectations of students, information and monitoring systems, teacher training, school leadership, and support for disadvantaged students. What is less clear, however, is the best way to implement those reforms. The OECD uses the term "school improvement programmes", referring to three main areas of intervention: school practices, the school as an organisation and the external policy environment (OECD, 2014b).

Various types of education policies have long timeframes, with their effects only becoming visible in the long term. Such policies must take into account different interests and ability levels. Education policies must be aligned with the education system's governance structure. They must also take into account the responsibilities of the different stakeholders, including students, parents, teachers, employers and unions. The implementation process is as important as the policies themselves.

One of the most important factors for successful implementation is the practices of the individual schools themselves. The OECD experience shows that the most successful reforms are those aimed at teaching and learning, rather than those that focus on the system structure and the distribution of resources (Elmore, 1996; Datnow, 2005). Initiatives to improve school autonomy, for instance, tend lately to focus on improving school practices, rather than only on transforming decision-making structures. Experiences in the OECD countries also show that changes in teachers' behaviour and practices have major effects on the effectiveness and continuity of policies (see Box 4.5). Many of the policies designed to improve teachers' practices assume that teachers will automatically adopt them and do not consider the possibility of a more subtle, gradual change (Ng, 2008).

Proper training of teachers and administrative staff is needed to implement the education reforms.

Training for teachers and administrative staff is therefore essential for any education reform to be implemented successfully. The professional development of those involved in any kind of programme or reform to be implemented is essential. Teachers often request specific training for new programmes, and such training is more effective if it lasts longer. Ensuring the sustainability of training programmes can be expensive, but it ensures that new programmes are more thoroughly accepted and understood by teachers. The challenge for the region today is not only to provide better working conditions for teachers, but also to demand that they provide better quality.

Data and detailed information on students are essential to monitor achievements and policy implementation. The various national and international evaluation systems could provide solid information that could greatly help to improve the quality of certain policies and strengthen the system's accountability. Proper use of internal school data could encourage a culture of self-evaluation and better organisation and planning in schools (Earl, Watson and Katz, 2003).

Improvements in the management and communication of education policies could make them more successful.

It is important to improve organisation and management capacity at the school level for the implementation of policies. Context is critical to the application of education reforms, which is why it is important to develop a community of experts and a suitable climate. Effective implementation depends on the involvement of all stakeholders and coherent alignment of policies. Effective communication with the various stakeholders and the school leadership are important components for the adoption of education policies. Leadership may centre around the school principal as the driver of reform at the school, especially at poorly performing schools (Mujis et al., 2004). However, in some contexts it may be appropriate for leadership to be shared with a critical mass of teachers and administrative staff.

Another successful factor in the experiences of the OECD countries has been to generate a professional community in which all members of the school share the same objectives and understand the need to work together, in a school culture conducive to progress. One effective practice to generate a professional community has been to give teachers enough time in their workload to ask questions, share experiences and communicate among one another. Making the teachers feel they are part of the education policies is undoubtedly the most important challenge for the reforms to be successful.

Depending on the school's stage of development, parental and community support for the school can also be essential to help the implementation of education policies.

Establishing education policy priorities for the region and considering the timeframe needed are also fundamental.

Establishing education policy priorities will show which policies are necessary in the education system to achieve its objectives. Although there is no single criterion for establishing education policy priorities, the United Nations National Development Strategies can provide a framework for identifying the most important policies. One example is the 2012 Pact for Mexico (*Pacto por México*), which identifies clear objectives, such as improving enrolment rates in upper-secondary and tertiary education, introducing full-time schools and making the national evaluation body (*Instituto Nacional para la Evaluación de la Educación*) independent. Experiences in the OECD countries show that a small, measurable number of education priorities have led to positive results, such as those seen in Japan and New Zealand, which draw up education plans every five years to establish policy priorities (OECD, 2014b).

Aligning specific education policies with a broader education agenda is an important factor for policy implementation (Earl, Watson and Katz, 2003; Reezigt and Creemers, 2005). It is not surprising that policies are more likely to survive if they are coherent with national, regional and local objectives. Colombia provides a good example of how allocating resources either directly to schools and institutions or through local government requires substantial co-ordination efforts. If such efforts are absent, policies and reforms may lead to overload and fatigue, reducing the schools' innovation capacity. Institutional alignment can also lead to better management models, especially in highly decentralised countries.

Conclusions and policy recommendations

Education policies are crucial to the role of education as a vector for social cohesion and inclusive growth in Latin America. The effectiveness of implementing those policies will largely determine the course of development in the region. Although several countries have dealt with the challenge of raising enrolment rates in primary and secondary education, they still need to improve quality and performance. Extra investment, though necessary, does not guarantee better quality. Inequalities of various kinds in Latin American education systems also remain a concern. In no other region covered by PISA does the socio-economic context play such a pivotal role in determining performance and the distribution of educational resources.

Policies need improving in order to achieve the goals of quality and equity in the education systems. A combination of different policies is needed to achieve these two objectives, as Mexico has in recent years. Short-term solutions that can be implemented with existing resources should meet the needs of the emerging middle class and prevent countries from falling into the middle-income trap, given the major fiscal constraints of most countries in the region. At the same time, there is also a need for long-term policies, which will not bear fruit immediately, but are essential for inclusive growth in the region.

Short-term policies are those that can make best use of existing resources, and cover several areas. Follow-up and support programmes for struggling students are vital to reduce repetition and dropout rates. It is important to improve tailored follow-up programmes, especially so that students who are more likely to drop out can be identified. In this area, support programmes for the transition between different

levels of education (primary to secondary and secondary to tertiary) have proven to be effective. It is also important to improve the available systems for obtaining information on students and their experience in the education system.

Teaching policies are a priority for the region. The status of the teaching profession and the commitment of teachers to the profession could both be improved by introducing better job conditions in exchange for better performance, continuing training, and opportunities for teachers and schools to learn from each other. For greater equity in education, teachers should be better distributed among schools, with struggling schools able to attract the best-qualified teachers.

Classroom policies have been effective at improving quality and equity in the education systems. It is important to create a learner-friendly environment. Performance and the school climate are closely associated, so it is essential to have an effective disciplinary framework at the school level.

Several countries should also improve the information mechanisms in schools. The experiences of the OECD countries show that it is helpful to include students and teachers in accountability processes, and to use the information for training purposes.

Long-term education policies, which require more investment and structural changes at the institutional level, remain essential for the region, and should be an integral part of education programmes. Greater efforts are needed in pre-primary education, which, despite leading to considerable skill gains for students at all stages of education, has received little attention in the region. Early education is still almost non-existent in many countries, and requires considerable investment in infrastructure and professional training, especially in the most socially disadvantaged schools. It is also important for curricular programmes to focus not only on developing cognitive skills, but also on communication, integration and other soft skills.

In addition to the aforementioned incentives, long-term education policies include a thorough professionalisation of the teaching profession. Stringent, transparent recruitment and evaluation procedures are therefore necessary, along with attractive career paths and teacher mobility mechanisms. Various policies can be successfully implemented only if teachers and administrative staff receive training and if school leadership is built around the school principal or a critical mass of teachers.

Finally, efforts to improve evaluation mechanisms should continue. Evaluations of students and teachers at different levels of education should be systematised and the skills of adults monitored when they enter the workforce. The different educational programmes introduced in recent years must also be evaluated and monitored in order to assess their impact properly.

Many valuable educational reforms and policies have been introduced in recent years, but it is important to ensure that they continue and to observe how they are implemented. For education policies to be successful, they must take into account the institutional structure and the stakeholders involved and provide a realistic medium- and long-term scheme to measure their impact. Educational and classroom policies must be clearly aligned with the broader education agenda to ensure that they are implemented coherently across the board.

Annex 4.A1. Summary of messages and policy recommendations

Section	Main message	Area	Secondary message	Level	Policy recommendations	Objective	Area of policy intervention
I. Overview: investment, enrolment and performance	Achievements have been made in education, but various challenges still remain	Investment in education	Investment in education (public and private) has increased but is still low compared with OECD levels	Pre-primary and primary	Invest in early-education centres	Enrolment	Governance
					Make childcare systems more flexible to expand access	Enrolment	Governance
				Secondary	Develop a realistic investment plan to increase the number of full-time schools	Enrolment	Governance
				Tertiary	Design mechanisms to drive the expansion of tertiary education	Quality	Governance
					Follow up tertiary education accreditation systems	Quality	Governance
			The quality of investment in education is just as important as the level of investment	Pre-primary and primary	Invest in training teachers specialised in early education and strengthen pre-school teaching	Enrolment	Teacher policies
				Secondary	Focus investment on aspects that have proven to have an impact on quality: teachers, full-time schools	Individualised instruction	School organisation
					Promote the use of internal evaluations for training purposes to improve and strengthen certain areas	Better identification systems	Assessment
					Create the conditions and encourage incentives for peer learning within and among secondary schools, and enable collaboration among teachers (TALIS 2013)	Better identification systems	Assessment
				Tertiary	Strengthen education councils that monitor programmes and institutions in tertiary education	Better coherence and co-ordination	Governance
					Expand systems for storing information such as repetition and dropout rates and job prospects to monitor effectiveness and linkages with the job market and improve early-warning mechanisms	Better identification systems	Assessment
		Education enrolment	School life expectancy has improved	Pre-primary and primary	Invest in teacher training for early-education centres	Enrolment	Governance
				Secondary	Use completion and well-being rates as a quality indicator	Better identification systems	Assessment
					Improve learning and teaching conditions by giving teachers more time with the same group of students	Individualised instruction	Teacher policies
					Develop a realistic investment plan in full-time schools	Enrolment	Governance
				Tertiary	Facilitate mobility between post-secondary and tertiary institutions through credit schemes and agreements among different universities	Mobility	Governance

Annex 4.A1. Summary of messages and policy recommendations (*cont.*)

Section	Main message	Area	Secondary message	Level	Policy recommendations	Objective	Area of policy intervention
I. Overview: investment, enrolment and performance	Achievements have been made in education, but various challenges still remain	Education enrolment	Enrolment remains low among various groups	Pre-primary and primary	Strengthen programmes that facilitate access to early education for disadvantaged groups	Enrolment	Governance
				Secondary	Make secondary education (upper and lower) compulsory	Enrolment	Governance
					Invest in full-time schools	Enrolment	Governance
				Tertiary	Create support programmes for students Extend loans for higher education	Funding	Governance
					Create flexible university-business programmes	Mobility	Governance
			Repetition and school dropout remain high	Secondary	Introduce policies focused on reducing repetition and dropout: focus on identifying and supporting struggling students and those at risk of dropping out, especially during the transitions between one level of education and another	Lower dropout rates	School organisation, governance
				Tertiary	Improve accreditation systems and management models	Monitoring	School organisation
					Provide programmes to link with the labour market without dropping out	Lower dropout rates	School organisation
	Despite improvements, performance remains lower than in the OECD countries	Quality of learning outcomes	Performance variation remains high, but has declined	Secondary	Introduce policies to reduce performance variation in several LAC countries in PISA: support programmes and tutorials, dropout reduction among children	Empowerment of teachers and principals	Teacher policies, School organisation
				Tertiary	Improve institutional co-ordination	Better coherence and co-ordination	Governance
			Various factors affect performance		The socio-economic context directly affects performance	Direct parental involvement in education	School organisation
				Pre-primary, primary and secondary	Encourage tutorial policies, extra teaching hours, and feedback to teachers to improve performance	Better performance	Teacher policies, working conditions
					Conduct impact evaluations on the effect of ICTs in the educational process	Monitoring	Assessment
				Tertiary	Improve student follow-up mechanisms (inter-university information systems)	Stronger student support	Assessment

Annex 4.A1. Summary of messages and policy recommendations (*cont.*)

Section	Main message	Area	Secondary message	Level	Policy recommendations	Objective	Area of policy intervention
II. Inequalities	The education system has many inequalities	Socio-economic inequalities	There are big performance differences between public and private institutions	Secondary	Increase the quality among schools with different socio-economic levels	Stronger student support	Governance
					Introduce a second language of instruction for some subjects for ethnic and linguistic minorities See examples from New Zealand and Australia	Stronger student support	School organisation
			Soft skills are lacking in the region		Reform curricula and strengthen the development of soft skills (communication, confidence, teamwork)	Empowerment of teachers and principals	School organisation, Teacher policies
		Geographical inequalities	There are strong inequalities between urban and rural areas	Secondary	Increase autonomy and the development of local skills	Empowerment of teachers and principals	Teacher policies
			Regional policies reach beyond schools		Strengthen regional co-operation in areas such as accreditation and teacher training	Better coherence and co-ordination	School organisation, Teacher policies
		Gender inequalities	High dropout rates among boys generate inequalities	Secondary	Introduce more follow-up programmes for boys that are most likely to drop out	Better identification systems	School organisation, governance
			Girls are less motivated and less confident		Select higher-skilled students (boys and girls) and provide support and follow-up during the transition to tertiary education	Better identification systems	School organisation, governance
III. Relevance	Students must receive training that makes them employable	Supply and demand of skills through technical training	There is a wide gulf between supply and demand for technical and vocational training	Technical and vocational training	Improve information on student vocational training (employment, wages, career paths).	Individualised instruction	School organisation
			It is important to foster labour-market linkages from primary and secondary education		Redesign incentives for vocational training: job opportunities, wage developments, mechanisms to support studying during employment	Stronger student support	Governance
IV. Policy implementation	Some policies are successful, and it is important for them to be implemented	Implementation lessons in OECD countries	Policies should take into account the institutional structure and stakeholders	Primary to tertiary	Encourage the development of a professional community with a common goal of improving through training	Empowerment of teachers and principals	School organisation, governance
			School policies are highly effective		Adopt consistent, complementary quality and equity policies and improve policy information systems	Better coherence and co-ordination	Governance

Notes

1. In this chapter, the word skills covers the concepts of "competencias" and "habilidades" used in the Spanish version.
2. The OECD has developed monetary estimates of the stock of human capital to complement existing indicators based on years of education or skill level. Such estimates allow comparisons using stocks of physical capital. They also make it possible to assess how changes in the stock of human capital are affected by various factors, including educational achievements, the labour market and demographic factors.
3. See Box 4.1 for more information on PISA and Latin America.
4. According to data in OECD (2014a), *Education at a Glance 2014*.
5. World Bank/World DataBank figures: http://databank.worldbank.org/data/databases.aspx
6. UNESCO/UIS figures www.uis.unesco.org/datacentre.
7. School life expectancy is defined as the number of years a person of a certain age can be expected to spend within the specified levels of education. The indicator shows the overall level of development of an educational system in terms of the average number of years of schooling that the eligible population achieves, including those who did not attend school. See UNESCO (2012) for more information.
8. See, for example, the situation in Colombia in OECD (2013c).
9. Attending pre-primary school still improves secondary-school performance even when controlling for the parents' socio-economic status.
10. The yearly performance change is calculated for the period for which data are available for each participating country.
11. Performance was measured on a scale of 1 to 6, with Proficiency Level 6 representing the highest performance. In the PISA terminology, "low performers" refers to students below Proficiency Level 2 and "top performers" refers to students with Proficiency Levels 5 and 6. Level 2 is considered the skill threshold in mathematics, i.e. the minimum level students should achieve to participate fully in modern society.
12. There is no statistically significant difference between Colombia and Peru in maths performance for 2012.
13. See Box 4.1 for a description of the skills of students with Proficiency Level 1 in mathematics.
14. ISCED 5A: In the International Standard Classification of Education, ISCED 5A refers to tertiary-type programmes that lead to an advanced research qualification.
15. UNESCO Institute for Statistics (UIS) database (circa 2012).
16. See Chapter 2 for a discussion of technical and vocational education and the functioning of labour markets.
17. The data were prepared by the following CEQ teams. Bolivia: Paz Arauco et al. (2014); Brazil: Higgins and Pereira (2014); Colombia: Lustig and Meléndez (2014); Costa Rica: Sauma and Trejos (2014); El Salvador: Beneke, Lustig and Oliva (2014); Guatemala: Cabrera, Lustig and Morán (2014); Mexico: Scott (2014); Peru: Jaramillo (2014); Uruguay: Bucheli et al. (2014). More information at www.commitmentoequity.org
18. Results extracted from the OECD-PISA 2012 database.
19. In PISA, equity is measured in two ways: the proportion of the performance variation explained by students' economic, social and cultural status, and the performance difference between socio-economically advantaged and disadvantaged students.
20. For each country, PISA calculates performance trends by comparing two PISA studies with the same focus (mathematics, reading or science). Brazil, Mexico and Uruguay participated in both mathematics-focused studies (2003 and 2012). Argentina, Chile and Peru participated in 2012 but not in 2003. For these three countries, the trend is calculated by comparing results from 2000 with those from 2009 (reading-focused). Colombia and Costa Rica have not yet participated in two studies with the same focus, so no trend can be analysed.
21. Several countries in the region (Argentina, Brazil, Colombia, Costa Rica, Mexico, Peru and Uruguay) reported a more severe lack of physical infrastructure and shortage of teachers in rural areas (OECD, 2013d).
22. Based on OECD/PISA 2012 figures.
23. Socio-economically disadvantaged (advantaged) schools are defined as schools in which the economic, social and cultural level is below (above) the national average. Based on PISA 2012 figures.
24. Based on UNESCO figures.
25. See Rico and Trucco (2014) for an analysis of developments in Latin America's secondary-education completion rate by gender.

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