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THE LATIN AMERICA LEARNING BAROMETER: MOVING FORWARD IN ACCESS, LAGGING BEHIND IN LEARNING

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Global Economy
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INTRODUCTION

Through a series of Learning Barometers, the Center for Universal Education (CUE) at Brookings Institution has provided a brief but comprehensive snapshot of the state of basic education in the different regions of the world. In this way, we attempt to contribute to the ongoing international debate on education by highlighting the main challenges that each region faces when trying to ensure the right to education for every child.

So far, CUE has published Learning Barometers for Africa and the Arab World. While all of the barometers have been structured with a common set of concerns in mind, they have also been adjusted in structure depending on the specific challenges each region faces and according to the availability of robust evidence that can be included to portray the specific situations.

The Latin American Learning Barometer is a joint effort between Brookings Global-CERES Economic and Social Policy in Latin America Initiative (ESPLA) and the Center for Universal Education (CUE) at the Brookings Institution. Similar to the other barometer editions, this document and the associated web-based interactive tool are intended to portray an overview of different countries in the region in a homogenous and comparative way in order to display some critical elements pertaining to the supply and quality of learning opportunities in Latin America.

This third publication in the barometer series is structured paying attention to the following questions:

1. How much progress has been achieved regarding **access levels** to basic education, including preschool?
2. How much progress has occurred in relation to **completion** of studies?
3. What is the situation regarding **student achievement**?
4. Finally, we focused on a critical issue for Latin America: to what extent does the previously described situation, based on national averages, actually veil deep disparities among different population groups? In other words, how **inequitable are education systems** in this region?

In the next section, we present some preliminary notes intended to specify the scope of the barometer (number of countries, period of time, and type of evidence used). The following sections are structured according to the questions listed above. In the last section, we provide some closing remarks. The appendix contains a detailed description of each variable analyzed along with methodological notes.

The overall picture provided by this barometer can be summarized as follows: the region has achieved significant progress in expanding access to preschool, primary, and secondary education, as well as in raising completion rates in primary education. This significant progress, however, is accompanied by major challenges in learning levels and wide gaps among different subpopulations within each country.

DATA SOURCES

This document covers the period from 2000-2013 for 20 countries within Latin America and the Caribbean. These countries have Spanish or Portuguese as the official language and are mostly located in continental South and Central America.

Data on access has been retrieved from the UNESCO Institute for Statistics (UIS) Data Centre. As such, the data is the result of officially reported information that is consolidated by the UIS using the International Standard Classification of Education (ISCED) 2011 revision.[1] Thus, when this report refers to "preschooling" it is using information on ISCED 11 level 0; in the same fashion "primary education" corresponds to ISCED 11 level 1; and "secondary education" to ISCED 11 levels 2 (lower secondary) and 3 (upper-secondary).

Data on completion has been retrieved from two reports issued by UNESCO Regional Bureau for Education in Latin America and the Caribbean.[2] These reports are both based on information produced through household surveys and processed by the U.N. Regional Commission (*Comisión Económica para América Latina y el Caribe* - CEPAL).

Data on learning levels comes from two different sources: UNESCO's "Third Regional Comparative and Explanatory Study (TERCE)" conducted in 2013, and the OECD's Programme for International Student Assessment (PISA), which has been conducted every three years since 2000.

Data on equity also comes from PISA since we measure inequality in relation to different performance levels.

For additional details on the information which is presented in the text as well as on the procedures used to portray the information please refer to the appendix.

ACCESS TO EDUCATION

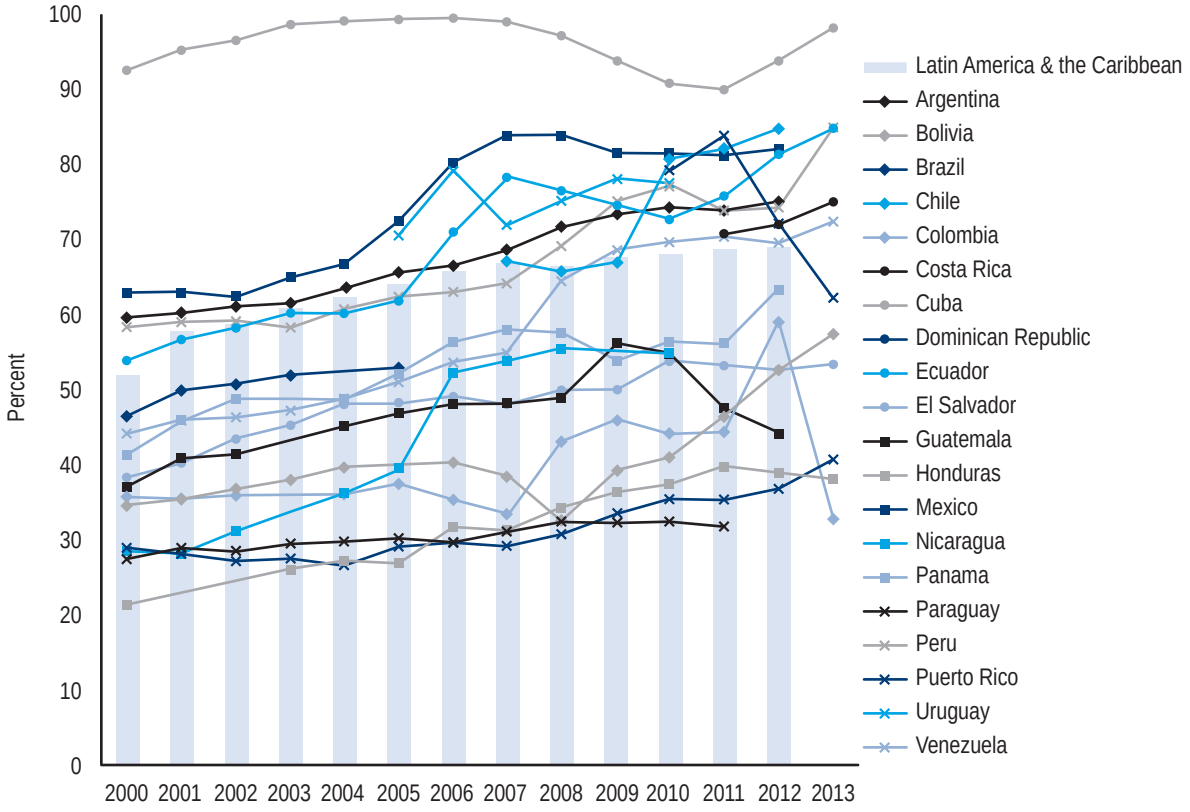
A prerequisite for guaranteeing the right to a quality education is to provide access to educational services. For this reason, it is important to start by looking at the extent to which the target population is granted access to education.

Preschool

Two decades ago, the idea of "preschool" in Latin America was still relatively unexplored. Today, things have evolved in the region: 12 countries aim at providing three-year preschool programs, 7 countries enacted two-year programs, and Ecuador offers a one-year preschool program.

Figure 1 presents the number of preschool-aged students enrolled in preschool education programs expressed as a percentage of the total population of the same age group (Net Enrollment Rate). The statistics on enrollment include both school-based and non-school-based programs (for instance, three out of four children in Cuba between the ages of three and five are served via non-school-based programs relying on staff who work directly with parents). The data does not take into account that some preschool-aged children may already be enrolled in primary education, so these num-

Figure 1. Net enrollment rate for pre-primary-aged students, 2000-2013



Source: UNESCO Institute of Statistics, UIS Data Centre. Retrieved on April 22, 2015. Notes: Latin America and the Caribbean regional values are computed as the median values of the region. Markers are used when data is available. When there is missing data the series are linearized.

bers may in fact be slightly higher. In Peru, for instance, this figure has represented a significant share of the five-year-old population in the period under analysis. Moreover, enrollment rates are affected by the accuracy of the population estimates used, and accuracy in turn, is especially difficult to guarantee in a period where major demographic changes are taken place.[3]

Latin America's net enrollment ratio in preschool increased from 52 percent to 69 percent from 2000 to 2012. In addition, while seven countries[4] are, as of 2013, providing preschool services to at least three out of four children, five countries[5] are serving less than half of the target population. Of these last group of countries, only Paraguay shows a slow rhythm of progress in the period observed (the rate went from 28 to 32 percent).

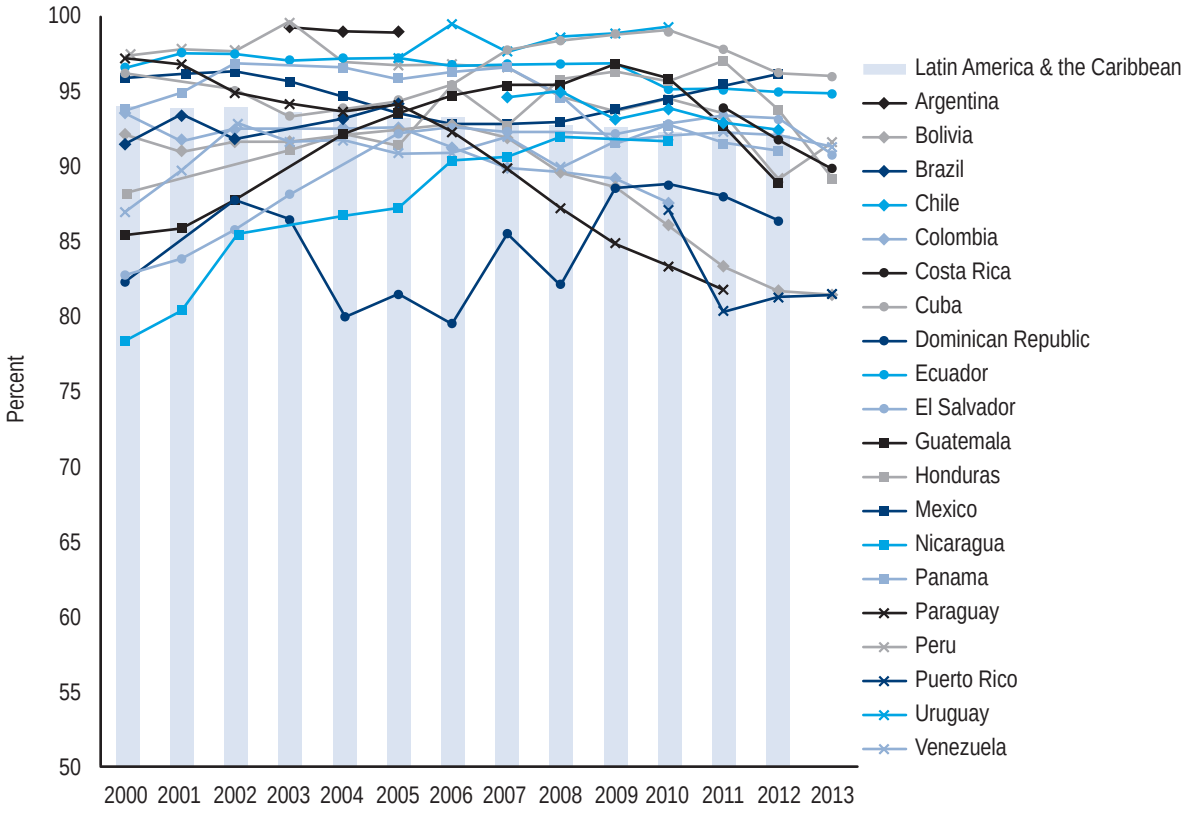
As a whole, the region has made significant progress in increasing access to preschool although these improvements have been somewhat uneven. Still today, regional net enrollment ratios are low if compared with OECD countries (where the average rate is 83 percent).

Primary education

The region has made substantial improvements in expanding access to primary education, achieving net enrollment rates of over 90 percent.

Figure 2 presents the number of primary-age students enrolled in primary school, expressed as a percentage of the total population of official primary school age. In this case, it is worth noting that not every country coun-

Figure 2. Net enrollment rate for primary-aged students, 2000-2013



Source: UNESCO Institute of Statistics, UIS Data Centre. Retrieved on April 22, 2015. Notes: Latin America and the Caribbean regional values are computed as the median values of the region. Markers are used when data is available. When there is missing data the series are linearized. The vertical axis is truncated for easier comparison.

try has an education level called "primary." The information hereby presented corresponds to what it has been classified as equivalent to primary (ISCED level 1) which is usually a fraction (mostly of six years of duration) of what several countries refer to as "basic education." In most countries (18), primary education corresponds to six years of schooling, the exceptions being Brazil (four years) and Colombia (five years).

As shown by the flatness of the lines in the figure, levels of access were already high by 2000. However, in 2000, only five countries[6] had at least 95 percent of the target population enrolled. At the same time, seven countries[7] were serving less than 90 percent of children in 2013. Moreover, some countries like Bolivia, Colombia, and Paraguay have experienced significant deterioration in enrollment rates over the years. However, this deterioration might be due to inaccuracies in population estimates rather than real declines in enrollment numbers.

All in all, data show that Latin America is currently quite close to guaranteeing universal access to primary education.[8]

Secondary education

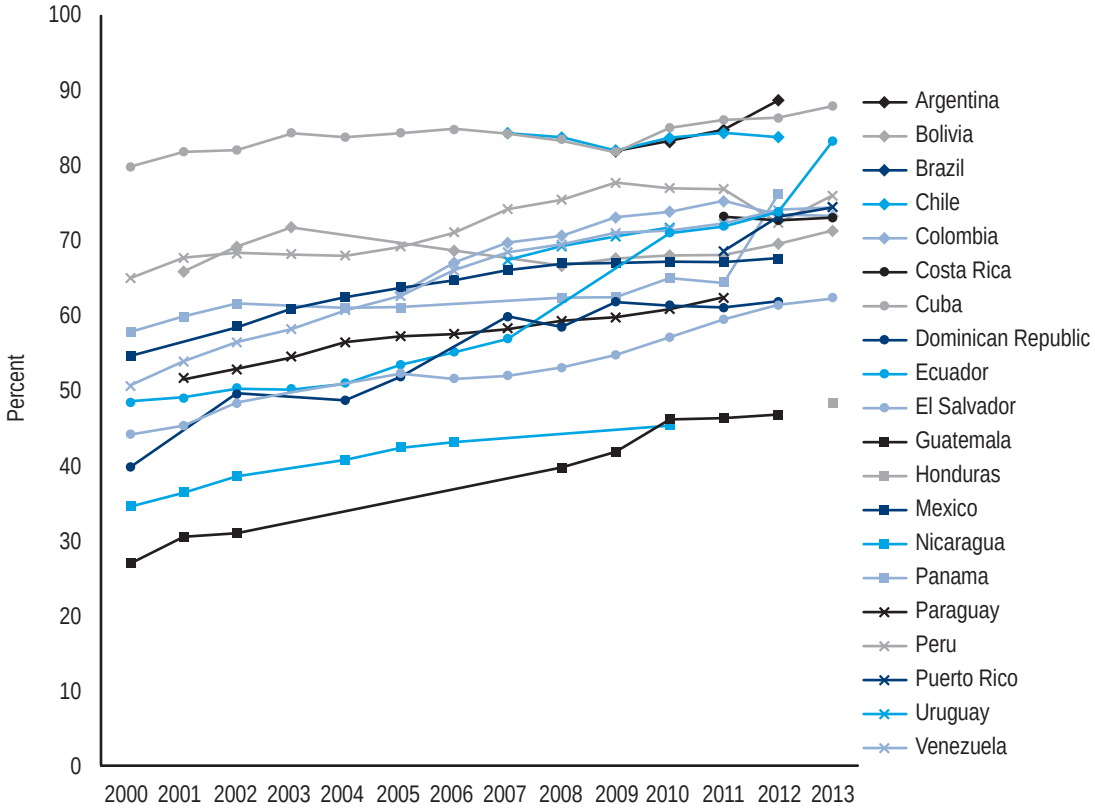
The expansion in primary enrollment rates has also led to a significant increase in secondary education rates, which rose from a modest 54 percent in 1990 to 76 percent in 2013 for the region as a whole. In fact, as part of the Second Summit of the Americas that took place in April 1998 in Santiago de Chile, all participating countries agreed to provide access to secondary education to at least 75 percent of their target populations by 2010. However, only four countries[9] achieved this goal, making the improvements in the region seem less than satisfactory. The less-than-satisfactory progress is more worrisome when accounting for studies conducted by the U.N. Regional Commission that show that completed secondary education is associated with a significant chance of overcoming poverty.[10]

Figure 3 presents the number of secondary-age students enrolled in secondary education, expressed as a percentage of the total population of official secondary school age. In this case, "secondary education" refers to ISCED levels 2 and 3. It is worth noting that in 10 countries (Argentina, Bolivia, Brazil, Chile, Ecuador, Mexico, Peru, Puerto Rico, Uruguay, and Venezuela) upper-secondary is considered compulsory; in the remaining countries (with the exception of Nicaragua, where only primary education is compulsory) only lower-secondary education has this status.[11] Brazil and Honduras have not reported this enrollment information so it is inadvisable to compute any regional value for this indicator.

Latin America shows some important progress in guaranteeing access to secondary schools. In 2000, only Cuba[12] was able to serve secondary education to at least seven out of ten youngsters, but by 2012 an additional 11 countries[13] did so. By the same token, the number of countries serving less than half of their target populations for secondary education was reduced from five[14] in 2000 to three[15] by 2013. Note however, that not even countries with higher levels of enrollment are able to guarantee universal access to secondary education.

Ultimately, aside from the improvements, the region still faces tremendous challenges in terms of assuring a higher (and less uneven) coverage in secondary level access rates in order to make sure that students acquire the necessary skills to enter either higher education or the labor market.

Figure 3. Net enrollment rate for secondary-aged students, 2000-2013



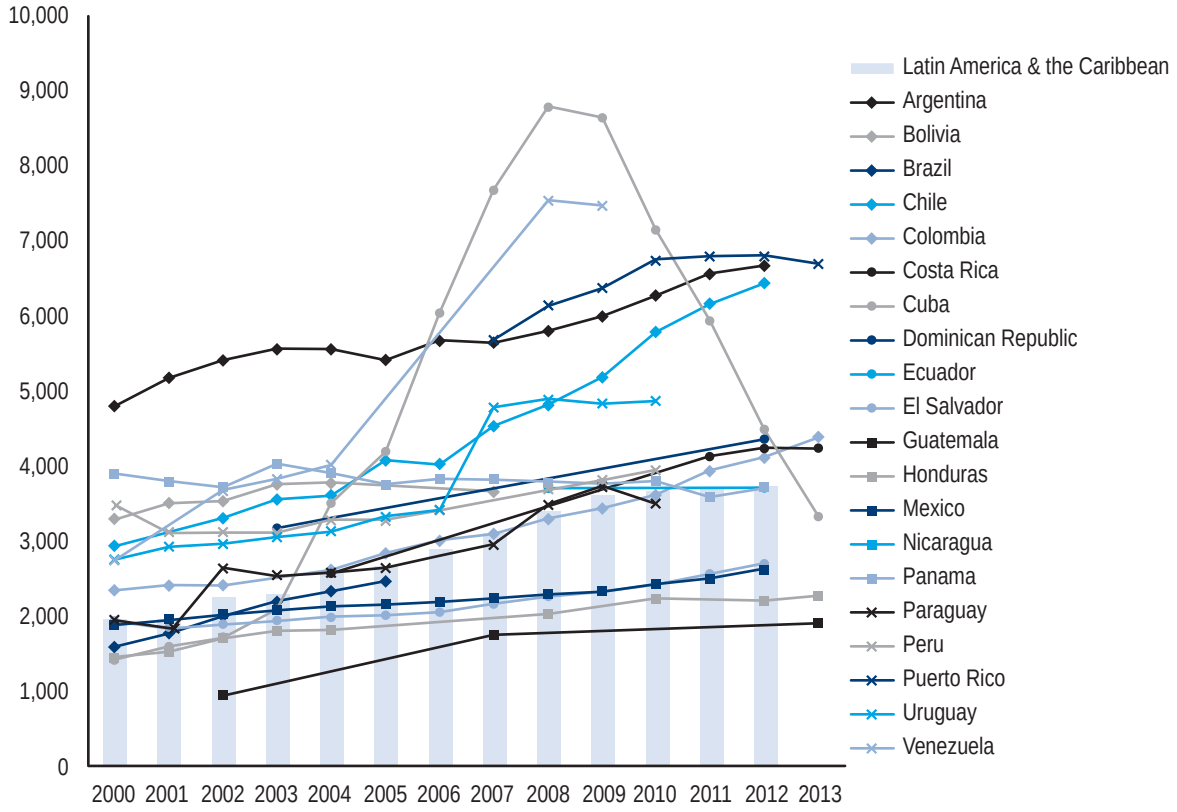
Source: UNESCO Institute of Statistics, UIS Data Centre. Retrieved on April 22, 2015. Notes: Latin America and the Caribbean regional values are computed as the median values of the region. Markers are used when data is available. When there is missing data the series are linearized. It is also worth noticing that Brazil has not reported this information which makes advisable not to compute any regional value for this indicator.

Tertiary education

Tertiary education is often seen as a major channel to increase economic competitiveness because it helps in bridging the labor market skills gap. As competition increases around the globe, Latin America is slowly recognizing the need to prepare students that can compete in the global marketplace. [16]

While tertiary education requires applicants to be secondary education graduates, it is open to a larger segment of the population regardless of age and hence, there is no a specific target population. At the same time, it is not compulsory. For these reasons, it does not make much sense to measure access as a percentage of a certain target population. Thus, for this education level, Figure 4 shows the size of tertiary education expressed as a fraction of the total population (enrollment per 100,000 inhabitants).[17]

Figure 4. Enrollment rate in tertiary education per 100,000 inhabitants, 2000-2013



Source: UNESCO Institute of Statistics, UIS Data Centre. Retrieved on April 22, 2015. Notes: Latin America and the Caribbean regional values are computed as the median values of the region. Markers are used when data is available. When there is missing data the series are linearized.

Latin American countries show increasing access to tertiary education. While Paraguay has almost tripled the relative number of people they serve in tertiary education, Chile has more than doubled it, and other countries also show trends of significant increases. In the case of Cuba and Venezuela a different pattern is observed. These countries have deployed specific efforts to universalize access to tertiary education. These efforts translated into a marked expansion during the period immediately afterward, since they led to the inclusion not only of those who completed secondary education at that moment, but also those who had completed secondary education in previous years. The result was a "bloated" short term increase that would give way to a more stable ratio in the subsequent years.

Finally, the simple average for the countries with observations reveals a trend of improvement. While in 2000 that average amounted to 2,500 students per 100,000 inhabitants, by 2012 the average was 4,300 students per 100,000. As a reference, for 18 North American and Western European countries with data for 2011, the simple average was 4,367.[18]

COMPLETION

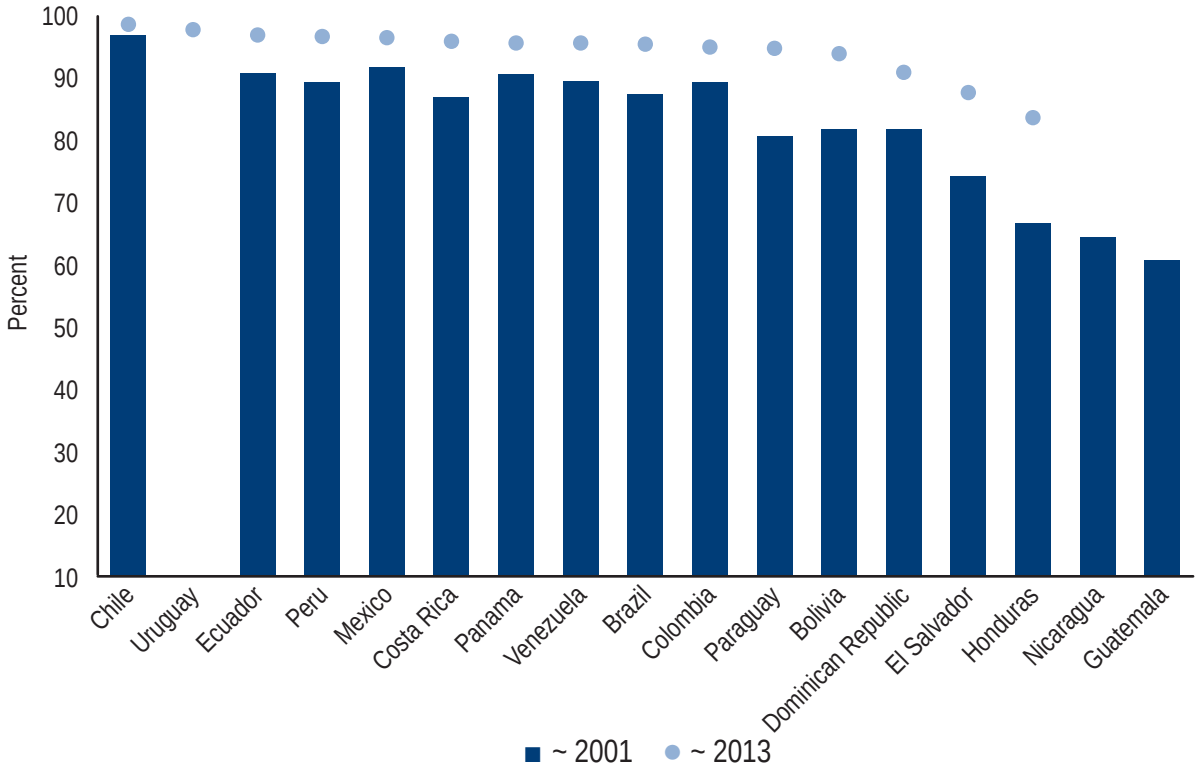
Access to school is a necessary but not sufficient condition to guarantee educational achievement, it is also crucial that students complete the curriculum for each education level.

Primary education completion

As shown elsewhere,[19] data in the early 2000s showed that most countries were on track to achieving the goal of universal primary completion. In 2000, four countries[20] had primary education completion rates of at least 90 percent; and by 2012 nine additional countries[21] reached that level. Out of these 13 countries, 9 have also reached 95 percent completion rates (the exceptions being Bolivia, the Dominican Republic, and Paraguay).

Figure 5 shows the percentage of the population aged 15-19 who have completed primary education[22] in 2001 (blue bars) versus 2013 (colored dots). Data for Argentina, Cuba, and Puerto Rico are not available, so the regional average has not been computed. There are several ways of measuring primary completion rates. Options range from measures of volume (of the graduating population) to actual proportions of those who have completed that level of education.[23] Here, we use information on this second type since it allows us to es-

Figure 5. Percentage of the population aged 15-19 who have completed primary education, 2001 vs. 2013



Source: CEPAL based upon household surveys. Taken from (UNESCO/Santiago, 2013). Source does not include the standard errors. Notes: ~2001: data for Chile corresponds to year 2000, data for Colombia, Dominican Republic, Guatemala, Mexico. ~2013: data for Mexico corresponds to the year 2012 while data for Honduras corresponds to the year 2010. Data not available for Uruguay (2001), Nicaragua (2013) and Guatemala (2013)

timate how far or near countries are from guaranteeing universal completion for specific segments of the population.

The difference in percentages between 2001 and 2013 shows that progress has indeed taken place in the region. The biggest change in percentage points comes from Honduras (raising completion levels from 67 percent in 2001 to 84 percent in 2013), followed by El Salvador and Paraguay.

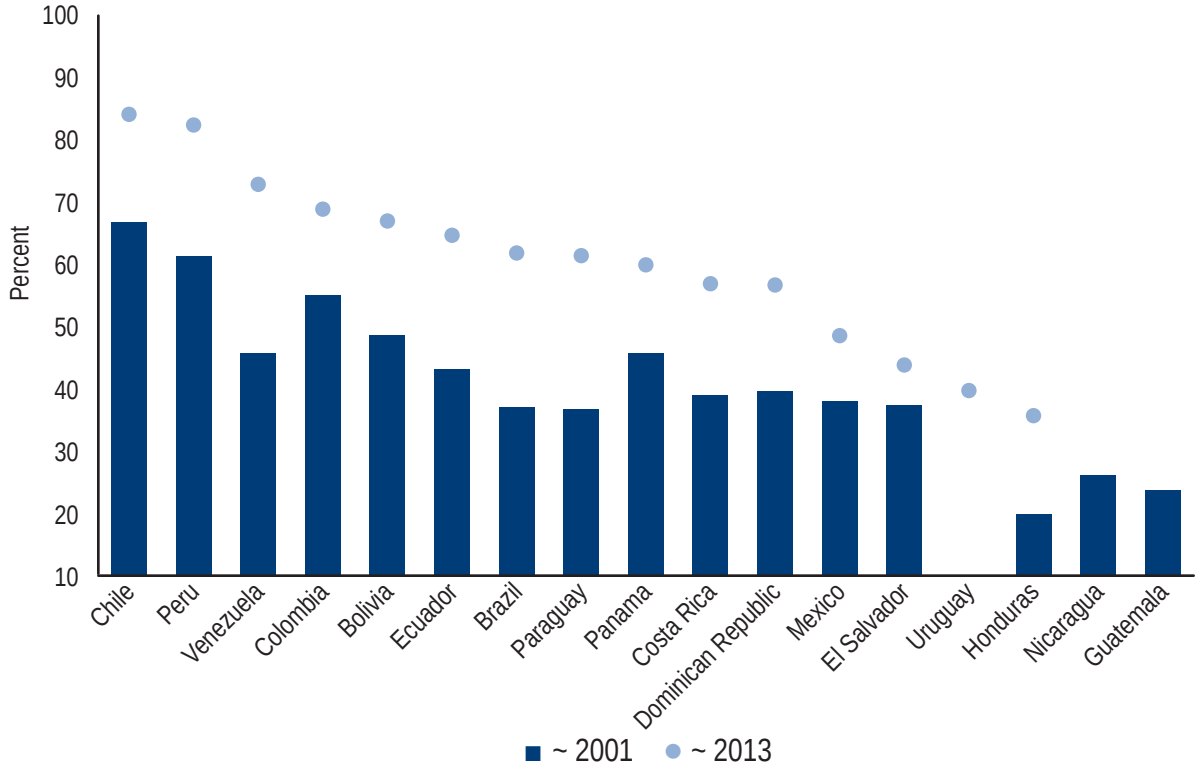
Secondary education completion

Following the same procedure, Figure 6 shows the percentage of those 20-24 years old who have completed upper-secondary education in 2001 (blue bars) versus 2013 (colored dots). As in the previous case, data for Argentina, Cuba, and Puerto Rico are not available, so the regional average is not computed.

Completion rates at the secondary education level show important limitations. In 2001, even though the rates corresponding to Chile and Peru were the highest, it still meant that less than 70 percent of young people completed secondary education in these two countries. The completion rates in the other countries were even lower. However, this situation should not veil the fact that steady progress has been made in most countries. Of the 17 countries with data, by 2002 only three[24] had completion rates at the secondary level for at least half of their population aged 20-24 years. By 2012, eight additional countries[25] have reached that threshold. Only two (Chile and Peru) surpassed the 80 percent level. Again, the biggest percentage increase has taken place in Honduras (going from 19 percent of secondary completion in 2001 to 36 percent in 2013). At the same time, the number of countries that have not increased secondary completion rates to at least half the 20-24 year old population decreased from 14 in 2000 to 6 in 2013.

Although access to secondary education has expanded over the last decade, the region is still facing high dropout and repetition rates which, in turn, slow down the rate at which young students complete this cycle.

Figure 6. Percentage of the population aged 20-24 who have completed secondary education, 2001 vs. 2013



Source: CEPAL based upon household surveys. Taken from (UNESCO/Santiago, 2013). Source does not include the standard errors. Notes: ~2001: data for Chile corresponds to year 2000; data for Colombia, Dominican Republic, Guatemala, Mexico. ~2013: data for Bolivia corresponds to year 2011, data for Honduras corresponds to year 2010 and data for Mexico corresponds to year 2012.

LEARNING LEVELS

As shown in the previous sections, the countries of Latin America have made substantive progress in providing access to preschool, primary and secondary education, as well as in ensuring completion of primary education. However, as shown by the partial evidence that exist on learning levels, the school experience of many children in Latin America is far from satisfactory. This evidence—even if restricted to a group of countries in the region and to two areas of school competencies (reading and mathematics)—suggests that overall progress in access has not been accompanied by adequate minimum levels of learning for everyone.

Learning levels in primary education

The most comprehensive studies of learning levels (in relation to the number of countries) are those conducted by the Latin American Laboratory for Assessing Educational Quality (LLECE). Established in 1994, LLECE is a network of countries that have conducted studies in three years: 1997 (PERCE), 2006 (SERCE), and 2013 (TERCE). The studies evaluate the performance of students in the third and sixth grades of primary school in the areas of mathematics, reading, and sciences (the latter area only evaluated for sixth graders). Because the 1997 study was technically weak and does not correspond to the period under analysis, here we only focus on the last two studies that allow for observing trends in performance.

The LLECE studies present their results using both information on mean performance levels (measured using a standardized scale with a mean of 500 and a standard deviation of 100 points) and in levels of performance[26]. For reading, the studies use four levels of performance (described in the annex), where levels 1 and 2 correspond to the most basic reading abilities[27] and levels 3 and 4 consist of more demanding tasks[28].

For mathematics, there are also four levels of performance where levels 1 and 2 correspond to the most basic mathematical operations[29] and the top two levels consist of more complex tasks[30].

Given these descriptions, achieving at *least level three* is a good threshold that students should attain by the end of primary school in order to have at least the most basic reading skills. Note that this assumption is made for this publication only and not by those responsible for the studies.

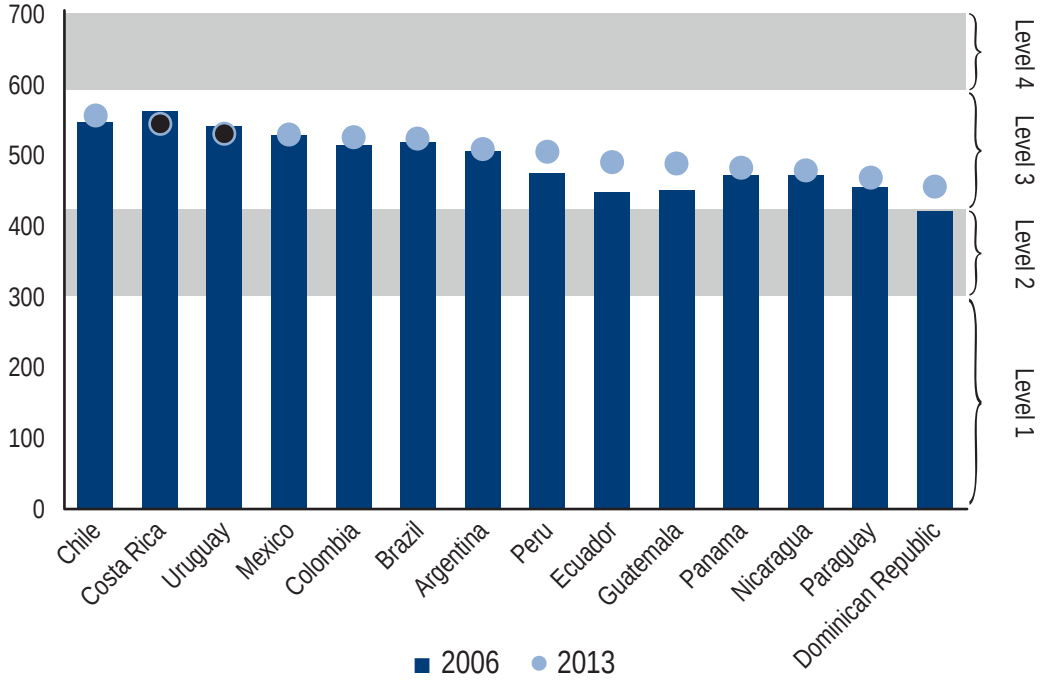
Figure 7 shows average scores in reading in 2006 (blue bars) versus 2013 (colored dots), where the black dots show a deterioration in average scores.

As shown, levels of performance varied significantly among Latin American countries, which point to the fact that high levels of access and completion of primary education do not necessarily translate into minimum learning levels. In 2006, 10 countries did not achieve minimum reading skills for at least half of their sixth grade students. By 2013, only two countries were able to improve in this regard. As shown in the graph, some of the countries that were lagging behind (Peru, Ecuador, Guatemala, and the Dominican Republic) made major progress over this period even though they still have poor performance levels overall. Among those countries where more than half of the students achieve the higher performance levels, progress is less pronounced. Even more worrisome is the fact that two countries (Costa Rica and Uruguay) show deterioration.

Table 1 shows the percentage of students who have achieved at least level three. Data show once again how percentages vary enormously from country to country, highlighting how heterogeneous the region is.

Performance in mathematics shows a similar pattern: In only four countries[31] at least half of students achieved

Figure 7. Average score in reading for sixth grade primary students, 2006 vs. 2013



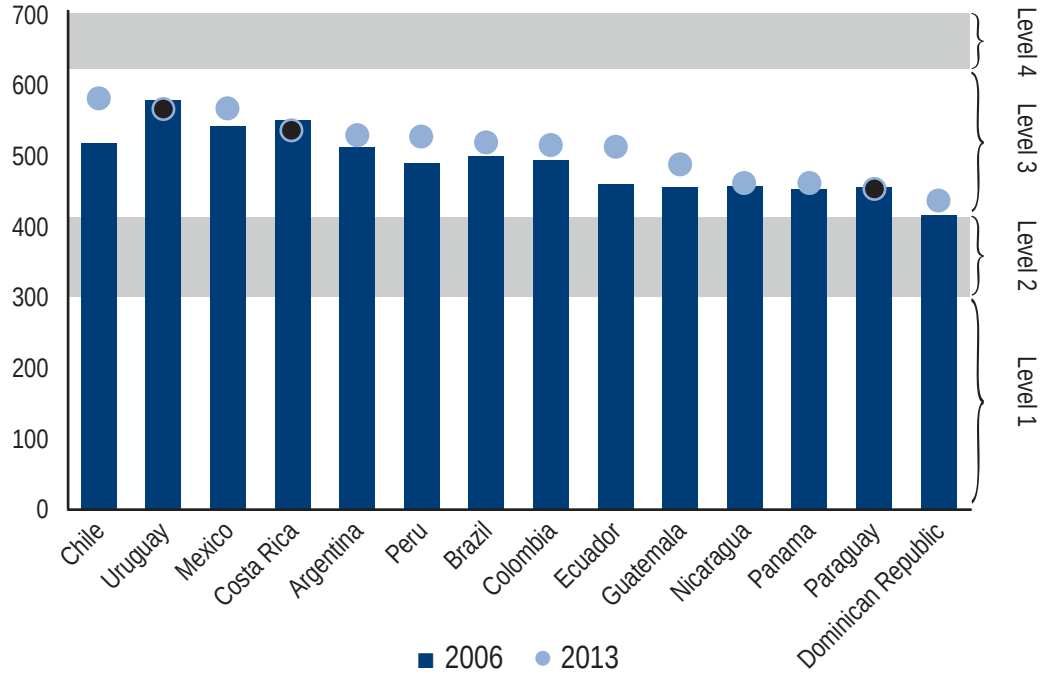
Source: (UNESCO/Santiago, 2014). Notes: Standard errors not included in source. Sorted as per 2013 results. Horizontal grey rectangle shows the threshold between performance levels (methodology described in UNESCO/Santiago. (2010).

Table 1. Percent of sixth grade primary students who achieve at least level 3 in reading, 2013

Country	Students level three or above (%)
Chile	69.7
Costa Rica	68.3
Uruguay	58.6
Mexico	57.5
Colombia	55.3
Brazil	53.1
Argentina	46.4
Peru	46.3
Ecuador	37.9
Guatemala	36.4
Panama	35.9
Nicaragua	30.7
Paraguay	28.7
Dominican Republic	20.6

a satisfactory performance in 2006 and, by 2013 three other countries[32] achieved that learning level. Among the countries with lower performance in 2006, significant progress has been achieved in Peru, Brazil, Ecuador and Guatemala. Once again, two of the top performers in 2006 (Uruguay and Costa Rica) and Paraguay showed a deterioration in 2013.

Figure 8. Average score in mathematics for sixth grade primary students, 2006 vs. 2013



Source: (UNESCO/Santiago, 2014) Standard errors not included in source. Sorted as per 2013 results. Horizontal grey rectangles show the threshold between performance levels (methodology described in UNESCO/Santiago. (2010).

Table 2 shows the percentage of students who achieve at *least level* three in mathematics. Apart from large disparities among countries, it is worth noting the extremely low levels of students reaching satisfactory levels in some countries. For instance, in the Dominican Republic, only 12 percent of students are able to perform at level three or above. Paraguay, Panama and Nicaragua also have extremely low percentages of students achieving level three: less than 1 out of 4 students.

All in all, Latin America has made mixed progress in improving learning levels during primary education. Also, the minimum threshold used for this analysis is far from being demanding since in more cases than not, this threshold is close to what the curricula of these countries prescribe as minimum goals to be achieved by the end of primary school (grade six in most cases).

Table 2. Percent of sixth grade primary students who achieve at least level 3 in mathematics, 2013

Country	Students at level three or above (%)
Chile	75.4
Mexico	69.5
Uruguay	68.2
Costa Rica	60.1
Argentina	55.6
Peru	52.6
Brazil	51.7
Ecuador	48.4
Colombia	47.7
Guatemala	34.5
Paraguay	23.3
Panama	22.7
Nicaragua	20.4
Dominican Republic	12.4

Learning levels in secondary education

Unlike the studies available in primary education, there are no standardized tests universally comparable across Latin America for secondary education. Therefore, the best available evidence that can be used to portray the situation of at least a fraction of secondary education students is the OECD Programme for International Student Assessment (PISA). PISA is a study of reading, mathematics, and science skills among 15-years-olds who are enrolled in seventh grade or above. It has no curricular base and is not attached to any single grade. Thus, it represents a cohort of the population (the fraction of it enrolled in grade 7 or above) who are enrolled in different grades after following different school trajectories. PISA is conducted every three years; in each round one of the subject areas is given priority and, therefore, studied in more depth. For the sake of simplicity, we only include the results on reading.

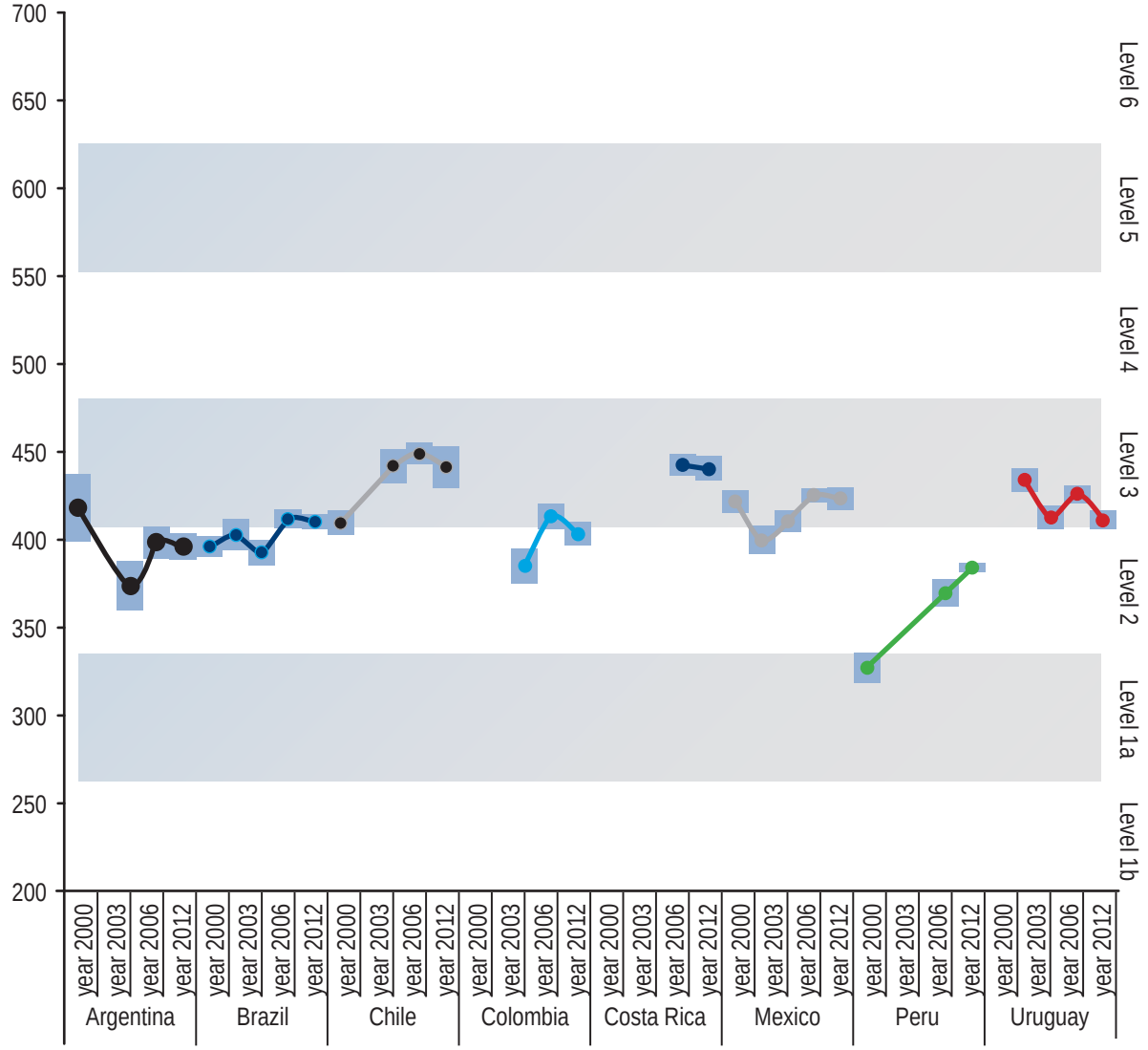
To facilitate the interpretation of the scores assigned to students, the PISA mean score for reading, mathematical, and scientific literacy performance across OECD countries is set at 500 and the standard deviation as 100 (as per the OECD results of the base year; 2000 for reading). Student scores are also benchmarked in terms of performance levels (6 levels in total, although level 1 is often divided into level 1b and 1a). Low performance levels suggest students are having trouble completing the most basic tasks. Following a similar logic as above, we assume that achieving at *least level two* is an appropriate minimum threshold that students should achieve by the end of secondary school.

In 2012, eight Latin American countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru, and Uruguay) participated in PISA. PISA covers only students enrolled in grade seven or above, however, the percentage of students covered may differ a lot across

countries. For example, PISA is taken by a sample of 63 percent of all 15-year-olds in Mexico and of 83 of all 15 year-old in Chile; this is due to the difference between the proportions of 15-year-olds who are enrolled in secondary education per country.

Figure 9 presents the average score achieved by the students from the participating Latin American countries in PISA 2000, 2003, 2006, 2009, and 2012. The graph shows that the average performance of every country does not reach upper levels in any of the years under consideration. This result implies that the typical student has difficulty performing the most basic reading tasks and lacks the essential skills needed to participate effectively and productively in society. Finally, with the sole exception of Peru (which started at the lowest position), there are no signs of continuous improvement in performance across the countries.

Figure 9. Average score in the PISA reading scale, 2000-2012



Source: OECD (2014) Notes: Mean scores are shown as confidence intervals (95 percent). Horizontal lines show the threshold between performance levels.

Table 3 shows the percentage of students who achieve *at least* level two in reading. Apart from large disparities among countries, the data show extremely low levels of satisfactory performance. For instance, in Peru only 40 percent of the students were able to achieve at least level 2. Also, more than 30 percent of secondary school students in Costa Rica and Chile, which rank near first overall among all participating countries in the region, have trouble completing the most basic tasks.

Table 3. Percent of secondary students who achieve at least level 2 in reading, 2012

Country	Students at level two or above (%)
Costa Rica	67.6
Chile	67.0
Mexico	58.9
Uruguay	53.0
Brazil	50.8
Colombia	48.6
Argentina	46.5
Peru	40.1

Source: OECD (2014). Notes: Standard errors are excluded for easier readability.

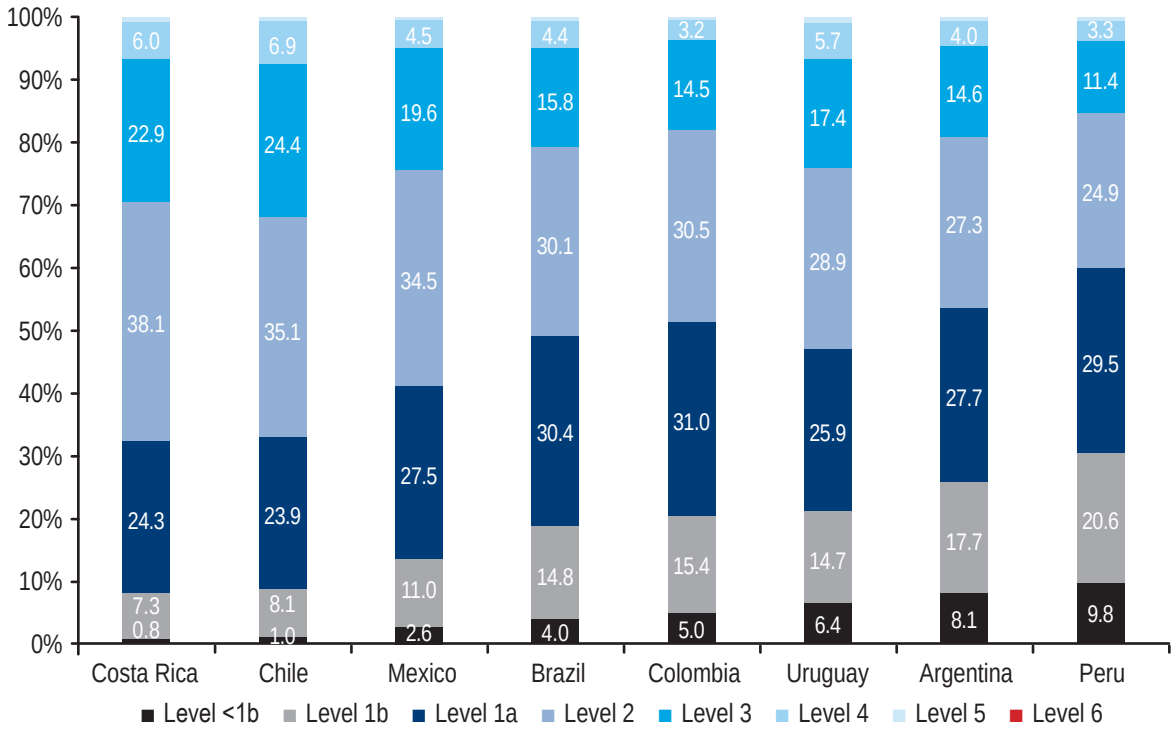
These results suggest there is reason to be concerned about the learning levels in Latin America since they imply that many secondary students, who are at most only a few years away from joining the labor force, will lack the minimum competencies needed to adapt to the labor market. Hence, despite the important progress made in the other dimensions under study, increased access and completion have not translated into minimum learning levels and thus, improving performance is still a major challenge for the region.

INEQUALITY

Apart from low learning levels, Latin America also faces an arguably more severe problem: it has one of the most unequal distributions of learning achievement by socio-economic level among countries where this sort of analysis is feasible. In other words, the educational failure is particularly acute in critical socio-economic contexts. This means that educational systems have not overcome social disparities but instead they reflect them. Both TERCE and PISA results shed light on the region's serious learning inequalities and the vast learning gaps within countries. Here, we focus on data provided by PISA.

Figure 10 shows the distribution of the 15-year-old students by performance level in reading, where 1b is the lowest performance level, followed by 1a, 2, 3, and so on.

Figure 10. Distribution of 15-year-old students by reading performance level, 2012



Source: OECD (2014)
Notes: Segments correspond to each of the performance levels (less than 1b; 1b; 1a; 2; 3; 4; 5; and 6). Bars have been aligned at the end of level 1. Standard errors are excluded for easier readability.

This graph corroborates the conclusion from the previous section that the learning deficiencies in Latin America are severe and that the distributions by performance levels are skewed towards the lowest levels, meaning that students are mainly concentrated in levels 2 and below while the share of students who are able to perform at the highest levels (levels 5 and 6) is extremely low. Even in Costa Rica and Chile (among the best performing countries), one out of three students performs at level 1. In four of the other countries, about one in two students performs at the lowest levels.

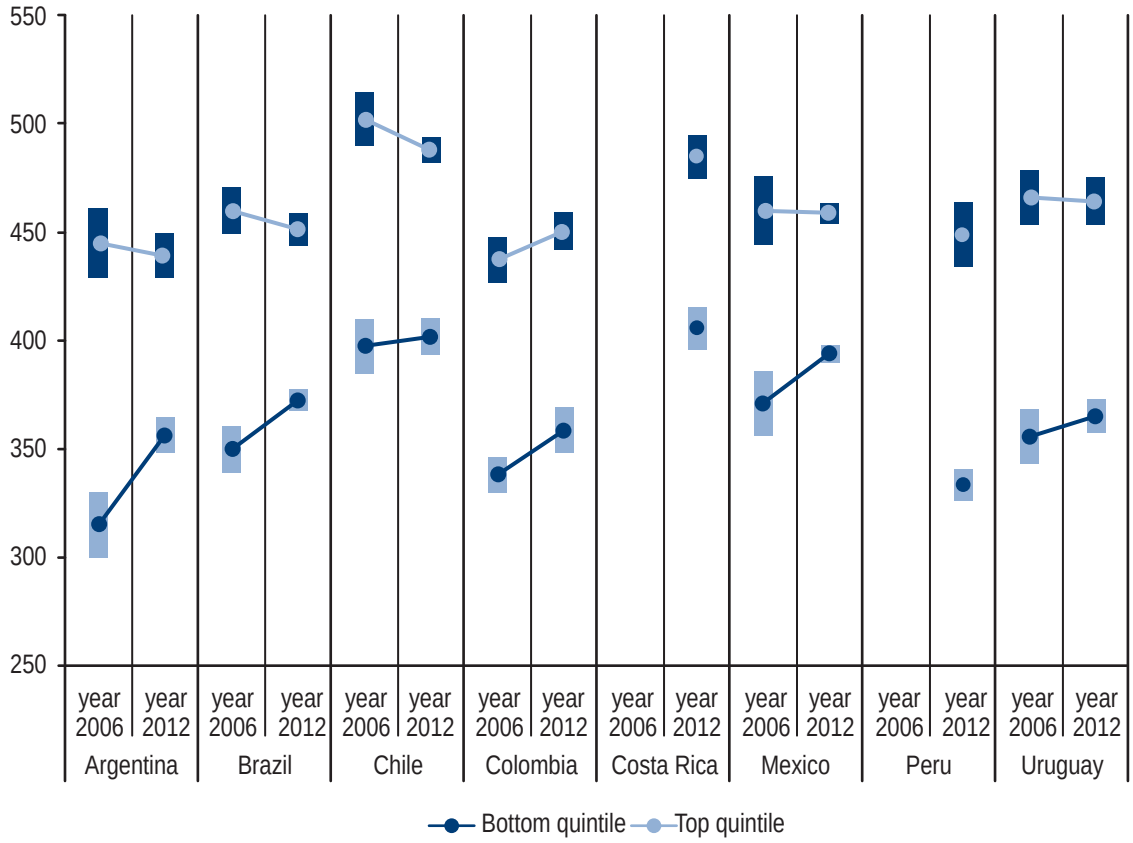
We now turn to inequalities in learning achievement by socio-economic level and for that, we use PISA's index

of home possessions (HOMEPOS),[33] which can be used as a measure of the socio-economic context of students.[34] By disaggregating the learning data by quintiles based on this index, we show that learning gaps are evident between the bottom and top quintiles. As shown elsewhere,[35] there is a difference of 85 test points (equivalent to two years of schooling as per OECD estimates) between the students from the bottom quintiles vis-à-vis those from the top quintiles.

These learning gaps, however, have been reduced between 2006 and 2012. Except for Costa Rica and Peru, both of which have no data from 2006, learning levels have become more equal: to a greater extent in Argentina which reduced it by 37 percent and to a lesser extent in Colombia where it was reduced by 7 percent.

Figure 12 compares these learning disparities according to gender, area of residence (urban/rural), type of school attended (public/private), and income inequality (HOMEPOS index) using PISA 2012. The graph shows the gap in levels (dark blue dots) between the upper level and the lower level and the same difference expressed as a parity index (bars).[36]

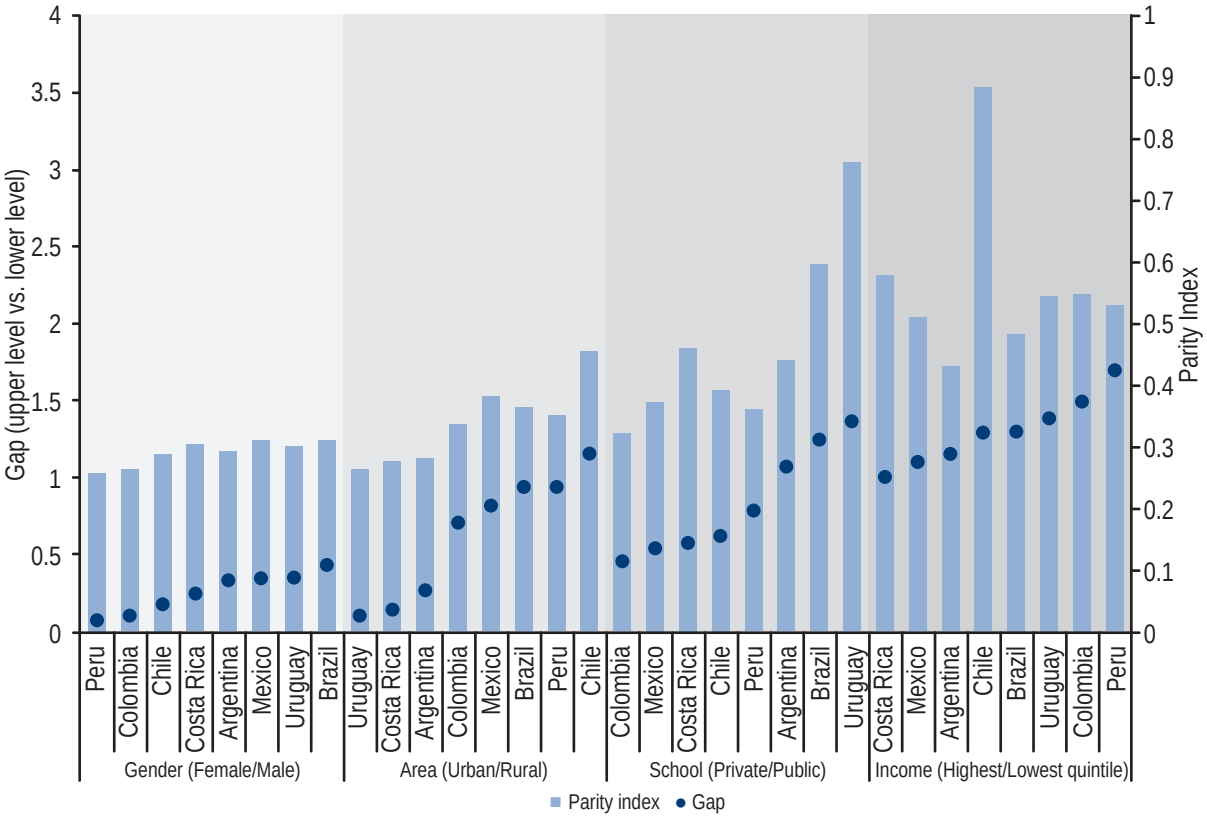
Figure 11. Average change in reading scores for bottom and top quintiles, 2006 vs. 2012



Source: OECD (2014). Notes: Quintiles were made using the index of home possessions (HOMEPOS). Mean scores for each quintile are shown with 95 percent confidence intervals.

Data shows that larger disparities are associated with the socio-economic background of students (higher bars and dots on the right-hand side), followed by type of school, then by area, and with the smallest disparities coming from gender. Although the performance differ-

Figure 12. Learning disparities according to gender, area of residence, type of school attended, and income inequality, 2012



Source: OECD (2014)
Notes: Gaps are computed as the difference between the lower bound of the confidence interval for the better off group and the upper bound for the worse off group in each comparison, and the same difference expressed as a parity index. Quintiles were made using the index of home possessions (HOMEPOS). Sorted from lower to bigger gaps.

ences in reading by gender tend to be smaller and in favor of girls, the opposite is observed for mathematics.

These breakdowns however, are not independent from each other; more affluent echelons of society tend to live in urban areas and send their children to private schools. Thus, it does not come as a surprise that the main gaps are clearly associated with the type school since private schools tend to show a smaller proportion of their students in the lower performance levels. This situation is consistent with the one shown by UNESCO (2013)[37] and highlights the fact that even after a decade of significant and sustained economic growth, socio-economic inequality remains as the most significant barrier for social mobility and inclusion.

FINAL REMARKS

This document and the associated web-based interactive tool are intended to provide an overview of some critical elements pertaining to the supply and quality of learning opportunities in Latin America.

Regarding access to education, the region has achieved significant progress over the last decade. As a whole, the region has made significant progress in increasing access to preschool, although these improvements have been somewhat uneven. Data also shows that Latin America is currently quite close to guaranteeing universal access to primary education. Aside from the improvements, the region still faces big challenges in terms of assuring a higher (and less uneven) coverage in secondary and tertiary education in order to make sure that every student is granted access to the opportunities created by higher education. All in all, the region has improved enormously in terms of access, which is a major achievement especially in countries where the population is scattered across a complex and diverse geography and where schools are still relatively scarce in rural areas.[38]

The difference in percentages in primary completion rates between 2001 and 2013 shows that progress has indeed taken place in the region, going from 85 percent to 92 percent. In contrast, however, the region still faces high dropout and repetition rates which, in turn, slow down the secondary completion rate (which rose from a modest 43 percent in 2001 to 58 percent in 2013).

In addition, learning levels are far from satisfactory. As shown, levels of performance in primary education vary significantly among Latin American countries, indicating that high levels of access and completion of primary education do not necessarily translate into minimum learning levels. All in all, Latin America has made mixed progress in improving learning levels both in primary and secondary. This suggests that many secondary students, who are not far from joining the labor force, will lack the minimum competencies to adapt to it.

Lastly, educational systems in Latin America have not overcome social disparities; instead they reflect them, and as a result the region has one of the most unequal distributions of learning achievement.[39] When comparing learning disparities according to gender, area of residence (urban/rural), type of school attended (public/private), and income inequality, we find that the larger disparities are associated with the socio-economic background of students—although these breakdowns are not independent from each other.

In the past decade, Latin America has enjoyed strong economic growth, with rates of 4 percent a year[40]—almost twice the rates recorded in the 1980s and 1990s. The region has also made remarkable progress in reducing poverty, with 51 million people joining the middle class.[41] Nonetheless, these achievements did not translate into remedying economic disparities embodied in the educational field. The low academic attainment among disadvantaged students is commonly seen as a disease that acts as a deterrent of social mobility.

Given that performance levels are also strongly associated with socio-economic disparities, the priority for Latin America should be effective targeting of low-income families and disadvantaged students. Their educational achievements should translate into significant changes in their lives, both in relation to their material conditions as well as in relation to the quality of their institutional and civic lives.

ENDNOTES

1. UNESCO (2013).
2. UNESCO/Santiago (2008b and 2013).
3. As shown by the United Nations' 2015 Revision of World Population Prospects, in 12 countries the number of births in a five-year period has started to decrease in the recent past.
4. Argentina, Chile, Costa Rica, Cuba, Ecuador, Mexico, and Peru.
5. Colombia, the Dominican Republic, Guatemala, Honduras, and Paraguay.
6. Cuba, Ecuador, Mexico, Paraguay, and Peru. Lack of data for Argentina, Chile, Costa Rica and Uruguay makes impossible to determine if these countries were already providing higher levels of access by 2000.
7. Bolivia, Colombia, the Dominican Republic, Guatemala, Honduras, Paraguay, and Puerto Rico.
8. As in the previous case, these figures might be underestimated since some children might already be attending secondary education programmes. At the same time, potential issues related to population estimates should be taken into account.
9. Argentina, Chile, Cuba, and Peru.
10. UN-CEPAL (2000).
11. Information on the structure of the education systems corresponding to 2015 retrieved from the UIS Data Centre on March 22, 2015. Most countries consider part of their compulsory schooling between one and three years of early childhood education.
12. Lack of data for Argentina, Chile and Costa Rica makes impossible to determine if these countries were already providing higher levels of access by 2000.
13. Argentina, Bolivia, Chile, Colombia, Costa Rica, Ecuador, Panama, Peru, Puerto Rico, Uruguay, and Venezuela.
14. The Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, and Nicaragua.
15. Guatemala, Honduras, and Nicaragua.
16. Haar, Jerry and John Price (2008) "Can Latin America Compete? Confronting the Challenges of Globalization," Palgrave Macmillan.
17. This indicator presents some problems since population pyramids across countries are not equal and hence, the age distribution of the population affects the interpretation of the chosen indicator across countries. For instance, in countries with a very young population (e.g., one-half of the population is below 15), the indicator would underestimate the implied capacity of the tertiary level relative to that in countries with even slightly older populations. Thus, these results should be interpreted with caution.
18. Based on the same source (UIS data) and excluding the data from San Marino that could distort the computed average. It should also be noted that in these countries the share of graduate students of the total is larger than in Latin American countries, and also that these countries tend to attract international students.
19. UNESCO/Santiago (2004).
20. Chile, Ecuador, Mexico, and Panama. Although other sources confirm it, the lack of data for Uruguay makes it impossible to determine if this country was already achieving the goal of universal primary completion by 2000.
21. Bolivia, Brazil, Colombia, Costa Rica, the Dominican Republic, Paraguay, Peru, Uruguay, and Venezuela.
22. Expected or theoretical graduation ages vary. At the same time not everyone graduate at the theoretical age given the prevalence of late entrance and grade repetition. Thus, while "timely" completion could be measured at graduation age, total completion should allow for counting those who would graduate being one or more years older

than the official graduation. That is the rationale for choosing an age-range at which graduation from primary reaches its peak. Additionally, since data come from household surveys which were not designed to provide information by single years of age, it is also necessary to use age groupings. This indicator is currently called "primary attainment rate" by the UIS.

23. For a summary of the different options, see UNESCO/Santiago (2004).
24. Chile, Colombia, and Peru.
25. Bolivia, Brazil, Costa Rica, the Dominican Republic, Ecuador, Panama, Paraguay, and Venezuela.
26. UNESCO/Santiago (2008a).
27. That is, ability to locate explicitly stated information with no competing text, locate information explicitly provided in different parts of a text, identify the meaning of words with no competing interpretations, integrate pieces of information, etc.
28. That is, ability to establish hierarchies, generalize, discriminate information, etc.
29. That is, ability to order natural numbers, interpret basic graphs, algebraically solve basic problems, recognize basic geometric shapes, etc.
30. That is, ability to compare fractions, convert fractions to percentages, identify parallel and perpendicular shapes, familiarize themselves with the properties of angles, etc.
31. Chile, Mexico, Uruguay, and Costa Rica.
32. Argentina, Peru and Brazil.
33. The index of home possessions (HOMEPOS) computed by PISA comprises all items on the indices of family wealth, cultural possessions and home educational resources. In order to disaggregate data according to a measure of socio-economic resources, we divided the data into quintiles.
34. It has been shown (Guadalupe & Villanueva, 2013) that the International Socio-Economic Index of Occupational Status (ISEI) used by PISA has limitations in capturing the situation of Latin American countries (since the source data used to compute it is largely based on the occupational structure of OECD labor markets). Thus, in a specific analysis of the Latin American situation it makes more sense to rely only on the information that is not based in this index.
35. Bos, Ganimian, and Vegas (2014).
36. In each comparison, the gaps is computed as the difference between the lower bound of the confidence interval for the better off group and the upper bound for the worse off group within students who performed below level 2 in PISA 2012.
37. UNESCO/Santiago (2013).
38. In fact, according to the World Bank, rural population in Latin America and the Caribbean as last estimated based on United Nations, World Urbanization Prospects was 116,685,403 in 2013 (i.e. 22% of total population).
39. World Bank (2003) "Inequality in Latin America & the Caribbean: Breaking with History?" World Bank Latin American and Caribbean Studies
40. Sosa and Tsounta (2013).
41. UNDP (2013)

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ANNEX

Data: Definitions and sources

Net Enrollment Rate in Preschool Education
Brief definition: The number of preschool-age students enrolled in preschool education programs, expressed as a percentage of the total population of official preschool age (according to ISCED 11 level 0). The statistics on enrollment include both school-based and non-school-based programs.
Source: UNESCO Institute for Statistics (UIS)

Net Enrollment Rate in Primary Education
Brief definition: The number of primary-age students enrolled in primary education programs, expressed as a percentage of the total population of official primary school age (according to ISCED 11 level 1).
Source: UNESCO Institute for Statistics (UIS)

Net Enrollment Rate in Secondary Education
Brief definition: The number of secondary-age students enrolled in secondary education programs, expressed as a percentage of the total population of official secondary school age (according to ISCED levels 2 and 3).
Source: UNESCO Institute for Statistics (UIS)

Enrollment in tertiary education per 100,000 inhabitants
Brief definition: Total number of students enrolled in tertiary education in a given academic-year relative to the country's population.
Source: UNESCO Institute for Statistics (UIS)

Percentage of the population 15-19 who has completed primary
Brief definition: The number of children aged 15-19 who have completed primary education as a percentage of the total population of that age group.
Source: UNESCO/Santiago, 2008b, 2013 based on information produced through household surveys and processed by the U.N. Regional Commission (CEPAL)

Percentage of the population 20-24 who has completed secondary
Brief definition: The number of children aged 20-24 who have completed secondary education as a percentage of the total population of that age group.
Source: UNESCO/Santiago, 2008b, 2013 based on information produced through household surveys and processed by the U.N. Regional Commission (CEPAL)

Average score in Reading, Primary
Brief definition: Mean performance level in reading (measured using a standardized scale with mean 500 and standard deviation of 100 points)
Source: Tercer Estudio Regional Comparativo y Explicativo (TERCE) conducted by Latin American Laboratory for Assessing Educational Quality (LLECE).

Percent of students that achieve at least level three in Reading (Primary)
Brief definition: The number of sixth grade primary students that achieved at least level three (score of 513.7 or above) as a percentage of the total sample population that took the test.
Source: TERCE, LLECE.

Average score in Mathematics, Primary Education
Brief definition: Mean performance level in mathematics (measured using a standardized scale with mean 500 and standard deviation of 100 points)
Source: TERCE, LLECE.

Percent of students that achieve at least level three in Mathematics (Primary)
Brief definition: The number of sixth grade primary students that achieved at least level three (score of 514.41 or above) as a percentage of the total sample population that took the test.
Source: TERCE, LLECE.

Average score in the PISA reading score

Brief definition: Mean performance level in reading (measured using a standardized scale with mean 500 and standard deviation of 100 points across OECD countries)

Source: OECD Programme for International Student Assessment (PISA).

Percent of students that achieve at least level two in Reading (Secondary)

Brief definition: The number of secondary students that achieved at least level two (score of 407 or higher) as a percentage of the total sample population that took the test.

Source: OECD, PISA.

Performance Levels

Levels of Performance, Primary

The Laboratory studies present their results using both information on mean performance levels (measured using a standardized scale with mean 500 and standard deviation of 100 points) and in levels of performance (UNESCO/Santiago, 2008a).

For reading, they use four levels of performance (fully described in Op. Cit. pp. 89ff) where the first two correspond to the most basic reading abilities (locating explicitly stated information with no competing text, locate information explicitly provided in different parts of a text, identify the meaning of words no competing interpretations, integrate pieces of information, etc.); and the last two consist of more demanding tasks (establish hierarchies, generalize, discriminate information, etc.). The table below shows the minimum cut-off reading scores for each level:

Lowest	---------->		Highest
Level 1	Level 2	Level 3	Level 4
299.6	424.5	513.7	593.6

For mathematics, there are also four levels of performance where the first two correspond to the most basic mathematical operations (students can order natural numbers, interpret basic graphs, algebraically solve basic problems, recognize basic geometric shapes, etc.) and the last two consist of more complex tasks (students can compare fractions, convert fractions to percentages, identify parallel and perpendicular shapes, familiarize themselves with the properties of angles, etc.). The table below shows the minimum cut-off mathematics scores for each level:

Lowest	---------->		Highest
Level 1	Level 2	Level 3	Level 4
309.6	413.6	514.4	624.6

Levels of Performance, Secondary Education

Student scores in PISA are also benchmarked in terms of performance levels (6 levels in total). Lowest performance levels mean that students are likely to have troubles completing the most basic tasks. The table below shows the minimum cut-off reading scores for each level:

Lowest		---------->				Highest
Level 1a	Level 1b	Level 2	Level 3	Level 4	Level 5	Level 6
262.0	335.0	407.0	480.0	553.0	626	698

Home Possessions index (HOMEPOS)

In order to disaggregate data according to a measure of socio-economic resources, we have created quintiles using the index of home possessions (HOMEPOS) computed by PISA and compared the lowest and the highest quintiles.

HOMEPOS comprises all items on the indices of WEALTH, CULT POSS and HEDRES, as well as books in the home recoded into a four-level categorical variable (0-10 books, 11-25 or 26-100 books, 101-200 or 201-500 books, more than 500 books).

The *index of family wealth* (WEALTH) is based on the students' responses on whether they had the following at home: a room of their own, a link to the Internet, a dishwasher (treated as a country-specific item), a DVD player, and three other country-specific items; and their responses on the number of cellular phones, televisions, computers, cars and the rooms with a bath or shower.

The *index of cultural possessions* (CULT POSS) is based on the students' responses to whether they had the following at home: classic literature, books of poetry and works of art.

The *index of home educational resources* (HEDRES) is based on the items measuring the existence of educational resources at home including a desk and a quiet place to study, a computer that students can use for schoolwork, educational software, books to help with students' school work, technical reference books and a dictionary.

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