

Latin America after PISA

Lessons Learned about Education
in Seven Countries (2000-2015)

Axel Rivas



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1. Introduction

The goal of the “MAPEAL”¹ research project –Map of Education Policy in Latin America– was studying education policies implemented in the seven countries in the region with a regular participation in the Program for International Student Assessment (PISA) tests from 2000 to 2012. The seven countries analyzed were: Argentina, Brazil, Chile, Colombia, Mexico, Peru and Uruguay.

More than 100 interviews with specialized reference individuals and political players associated with education in all seven countries were conducted, while more than 500 documents on policies implemented were consulted, and multiple statistics sources were processed for the quantitative dimension of this study.

Contexts, education policies in the 2000–2015 period and educational results measured by various indicators were studied². At the final stage of this study, a set of hypotheses about the potential explanations for the differences in results among countries were put forward, with several open questions and suggestions for the future of education in the region.

This project was developed by the Center for Implementation of Public Policies Promoting Equity and Growth (CIPPEC by its Spanish acronym), with the support from Natura Regional and Natura Institute. It received the collaboration from partner institutions in the various countries: Educación 2020 in Chile, Empresarios por la Educación in Colombia, GRADE in Peru and Vía Educación in Mexico³. The final document was discussed by a board of experts and specialists from the countries surveyed.

This executive summary features the main findings from this research. Please refer to the full document for an insight of the different dimensions analyzed⁴.

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¹ See www.cippec.org/mapeal

² This study focused on regular education and early childhood, primary and secondary education levels. Higher education was not addressed, except in general terms.

³ Each partner institution provided an essential support for the completion of this study, coordinating interviews in each country, and completing a guiding questionnaire on education policies of the period under analysis. Also the project had specific collaborators: Antonio Romano in Uruguay and Inés Dussel for the curricular dimension.

⁴ Available at www.cippec.org

2. Context: The New Century in Latin America

The period surveyed was a time of social change for the region. From 2000 to 2013 the GDP in Latin America grew by 52.8 percent at an annual rate of 3.34 percent. Simultaneously more than 50 million people lifted themselves from poverty, coming onto the layers of new emerging middle classes. The export boom marked a stage of favorable global exchange for the region, with different scenarios and scopes depending on each country.

This phase of economic growth and social improvement was remarkable. The public social expenditure expanded from 11.7 percent to 14.5 percent of GDP. Conditional transfers for the most disadvantaged social sectors were notably increased. Unemployment, malnutrition and infant mortality rates decreased; while social security coverage, healthcare and non-contributory pension plans increased.

The recovery of democracy and its stabilization were another mainstay in this stage, with the State's institutional quality improvement standing out. Indicators of political civil responsibility showed clear improvements in most countries, with variations depending on their government cycles and stages.

However, social inequality, a particularly critical dimension in the region, did not reflect a significant progress. Latin America continues to be the most unequal continent in the planet. During the period analyzed poverty decreased much more clearly than inequality, showing that power structures being concentrated in few hands continues to be an unresolved challenge in the region.

Also economic and social achievements were not linear. Poverty reduction expanded a social segment of vulnerable middle classes and did not solidify a linear progress path in different spheres of social life. The development models in the different countries created dependence –often of an extreme nature– on natural and/or primary resources, with a short-term vision that wasted opportunities for more sustainable paths and deeper discussions on development models.

This study examined such context within the 2000-2015-period as a historic stage of great progress, contradictions and unresolved debts. The social situation in terms of income experienced a remarkable improvement, but behind these material improvements urban life has continued as a dimension with different tensions. Crime, drug dealing, addictions and other social issues even grew in some countries as poverty decreased.

Residential segregation consolidated as a process of social separation of people into differentiated life standards, with unequal rights and existential conditions. In terms of education, social fragmentation turned into a much more complex matter than what is shown by the improvement in income indicators. All such dimensions, and many more, were taken into account to map out the social, political, economic and cultural context interacting with education systems in the region.

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As a second section within the context chapter, differences among countries surveyed were analyzed in terms of different dimensions. Features of the population of such countries were characterized, as well as their political cycles and the evolution of their social and economic indicators. Among the most significant data, the Peruvian case stands out (with a vast improvement in various social indicators), as well as those of Colombia and Brazil in terms of their reduction of poverty departing from specially critical situations; while Chile (the country with the best overall social indicators among the ones surveyed), Uruguay and Argentina also attained large achievements taking as a basis their less acute historical situations, and in the particular case of Argentina, its great crisis in 2001. Conversely Mexico experienced a different cycle, with a higher economic and social stagnation in the new century.

3. 2000-2015 Education Policies: An Agenda in Motion

The third chapter is the longest one in the book, as well as the hardest one to summarize without losing its original sense: mapping out a wide variety of policies in all seven countries throughout the period surveyed. This is a synthesis of the most outstanding trends including some examples of the different countries.

3.1. The Concord of Rights: More Financing, More Students, More Recognition

During the first 15 years of the 21st Century, Latin America experienced a triple joint expansion process of education rights. Access expanded in all education levels, state funding grew and the rights of excluded and marginalized populations were recognized, thus extending the borders of traditional education. Not all countries appealed to the same strategies nor did they progress at the same pace, but there was certain convergence taking up the challenge of a universal conception of education extended up to secondary level.

In average mandatory education went from 10 to 13 years from 2000 to 2015.

All countries studied (except for Peru) extended the years of compulsory education both in its early childhood and its secondary level. In average mandatory education went from 10 to 13 years from 2000 to 2015. New education laws set forth these and many other changes that expanded rights and created new obligations.

Investment per student went from constant US\$1261 in 2002 to constant US\$2084 in 2011 in the countries under analysis. Education expenditure over GDP jumped from an average of 4.04 percent in 2000 to 5.44 percent in 2011.

Investment per student went from constant US\$1261 in 2002 to constant US\$2084 in 2011 in the countries under analysis. Education expenditure over GDP jumped from an average of 4.04 percent in 2000 to 5.44 percent in 2011. This great increase in education budget came with and exceeded a period with a remarkable GDP growth in the region. Particularly Argentina, Brazil and Uruguay were the countries with the highest increase in investment in education. In a second group, Chile, Colombia and Mexico also increased their budgetary efforts. Only Peru was left behind in this dimension: its education budget increased significantly, hand in hand with its GDP, that is, not much effort was made in terms of education budget as it happened in the other countries.

These promising trends cannot overlook large social and education debts in the countries in the region. The increase in financing and education rights was a trend that ran parallel to the structural continuity of unequal societies and was not enough to revert large needs at schools, especially in rural areas in the poorest countries.

3.2. A Renewed Centralized Governance

One of the most significant changes in education agenda in the new century was the renewed centrality of education governance. The period under survey marked the passage from de-centralization, which had been the leading policy in the 1990's, to a strategic re-centralization of Ministries of Education in the 2000's.

This process was not completed through re-centralization of the management of schools, but through new and old policy devices: curricular reforms, which were more prescriptive or standard-focused; textbooks, considered as great national interventions intended for the regulation of the actual curriculum; and quality assessments as instruments for a new result-based governance. This re-centralization strategy was remarkable in Brazil, the most largely populated country in the region, whose education government structure is also de-centralized in 27 states and 5564 municipalities.

These policy devices were combined with a reunification of information systems, the creation of new areas within Ministries of Education, and the leadership of Presidents and/or Ministers of Education that marked an energetic direction in countries such as Chile, Brazil, Mexico or Colombia. The education agenda moved to the forefront in the politics arena. A centralized state control was developed, or even created for the first time in some countries, with new governance tools for education systems that were expanded in numbers and overwhelmed with demands. A sign of this change of age was the creation or strengthening of agencies for the assessment of education quality in countries such as Brazil, Chile, Colombia, Mexico and Uruguay.

Argentina and Uruguay followed a more passive path in this aspect. In Uruguay the complex isolation of government institutions did not allow the introduction of systemic changes, and in Argentina something similar happened with the additional complexity of its federal government scheme. In turn, maintaining a dialogue-based dynamics with teacher unions, which also stood out in Brazil and Chile, created in Argentina and Uruguay a more static position in the agenda of education policies. Both countries reviewed their policies from the 1990's, but they did not succeed to hold a more concrete agenda in replacement.

3.3. An Ambivalent Curriculum between Prescription and Expansion

In the period studied curricular policies were an axis of change in all the countries under survey. Logics applied, however, showed contradictory traditions and curricular codes. On one hand, more prescriptive curricular materials were used, aimed at influencing teaching with concrete guides for teachers: learning maps, standards, booklets on the main contents, activities and didactic sequences. On the other hand, the difficult political coordination of reforms translated into very extensive curricular designs, with excessive contents and, consequently, with an often non-fertile 'soil' in practice.

There were also contrasting strategies in priority contents. Standardized tests produced a magnetic attraction to traditional subjects, especially language and math. Meanwhile new curricular spaces were being opened or strengthened such as foreign languages (chiefly English), citizenship and technology. Another common strain in the

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combination of curriculum and didactics was the one related to the teaching of competences and constructivist approaches, which clashed with misunderstandings and difficult translation processes in teaching practice.

Such strains could not be solved either extending school hours (still an incipient process in almost all countries) or with a more prescriptive curriculum. These factors may be indicating a time with greater social demands to education in the context of technological and cultural changes, and a lack curricular definition instances that go beyond incremental agreements..

3.4. Textbooks as Mass Short Cuts and Digital Exponential Materials

Textbooks were a leading axis in almost all the countries analyzed, whether produced by the state or bought in the private market.

A trend resulting from this increased centralized governance was the emphasis put on the provision of free materials for teaching and learning. Textbooks were a leading axis in almost all the countries analyzed, whether produced by the state or bought in the private market. Schools were filled with textbooks, thus continuing with previous policies, but to a greater extent in terms of amount and variety.

Mexico, Chile and Brazil are the countries with the greatest historical consolidation in the provision of textbooks (Mexico in as exception for it produces only one textbook for primary education). Especially Brazil expanded this supply throughout the years covered by this research. Through less institutionalized ways but still very active, Peru, Argentina and Uruguay also increased significantly the amount of textbooks and other reading materials. Colombia was an exception in this matter, with a curricular tradition with less participation from the State.

In parallel to this trend of increasing textbooks in almost all countries, the access of teachers and students to digital materials over the Internet has grown exponentially. In all countries, although with different approaches and intensities, the State launched a large amount of 'paracurricular' materials in their novel education portals. Together with the expansion of free and paid materials on the Internet, this resulted in a double contradictory movement: increased guiding and focus through textbooks, as well as increased diversity and dispersion through exponentially-increasing digital access.

3.5. Enlightened from the Outside: New Quality Assessment Mechanisms

Quality assessment policies were the starring roles in the scenario of the new century in education for Latin America.

Parallel to the previous trend, quality assessment policies were the starring roles in the scenario of the new century in education for Latin America. Countries such as Chile, Brazil, Mexico and Colombia went from general diagnostic evaluations set up in the 1990's to evaluations with a great impact on the regulation of education systems.

Such assessments resulted in new data-driven incentives per school, public pressure on accountability and/or payment for teachers based on results. The education system was opened to foreign scrutiny. One of its consequences was an internal division of schools depending on results. This also brought new types of 'signaled' schools with different kinds of assistance and autonomy from the state depending on results, more

emphasis on merits, competition or distinction began to emerge to a varied extent depending on the countries.

In countries such as Chile, Brazil and Mexico, two trends were combined creating a pedagogical governance ‘plier’ model: textbooks defined contents, sequence and teaching pace, while assessments controlled results and regulated incentives to remain focused on them.

Assessments were the preferred mechanism for several countries for different purposes. Not only were schools assessed to set goals, rewards and punishments, but exams for the passage to higher education increased and teacher evaluations were created or expanded. The State used these policy devices as power short cuts. In increasingly massive education systems and increasingly uncertain social and cultural contexts, regulations moved towards the synthesis or the ‘skeleton’ of teaching: exams. Latin America began to be filled with them like never before.

These short cuts revealed that education was moving from the inside to the outside. Schools, teachers and curriculum started being increasingly regulated by public results, pressure from the world of economics, new standards or incentives. The region turned into an actual laboratory of education assessment.

Nevertheless, not all countries followed the same path: Argentina, Uruguay and Peru scarcely appealed to these evaluations as a source to make decisions and put pressure on schools. Mexico and Chile, after using student tests to develop economic incentives for schools and teachers, began reviewing these high-impact policies seeking for a less extreme balance.

3.6. Academic Regimes: More Flexibility and Invisible Divergent Models

Academic regimes have shown a converging trend towards making learning environments more flexible. In all the countries the conviction of finding alternatives to grade repetition and separating students in homogenous classrooms based on education level (streaming) got stronger. As a concrete example, in almost all the countries the concept of a pedagogical block integrated by the first and second grades of primary education was established (with automatic promotion in Argentina, Brazil, Chile, Mexico and Peru).

In secondary education changes in academic regimes became stronger, searching for alternatives to the homogenous school format that historically created selective and expulsive processes. Student promotion criteria became more flexible, with the creation of new assessment steps that were more comprehensive, diagnostic and related to what had been taught; and more makeup tests or compensation choices were created for students.

In many instances these policies were isolated or intermittent, and they found resistance in a portion of the teaching community, which felt a governmental pressure for students to automatically pass to the next level of education. This created still unresolved strains, which are not static. In most countries there was a progress in new pedagogical

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concepts for inclusion, where implemented policies and new developments by specialists in the field converged. However, this progress is still slow for the magnitude of changes required for the universalization of secondary education.

Another dimension of academic regimes shows a diverging comparative scenario among the countries analyzed: higher education admission exams. Argentina and Uruguay are two exceptional cases in the world because they ensure free and public higher education, without limits on capacity or admission exams. Peru is an intermediate case, but in Brazil, Chile, Colombia and Mexico access to higher education is regulated by admission exams. Particularly, Chile is the country with the highest higher education enrolment fees in the region. Admission exams showed significant variations and, especially in Brazil, they were combined with scholarships to provide a more massive access to public higher education institutions, which have limits on capacity and fees.

3.7. Policies to Provide Educational Justice in Unequal Societies

Policies designed to reverting education exclusion were extensive and increasingly diverse. Social programs based on conditional transfers have developed exponentially in the new century and came with a number of educational actions. New schools and teaching positions, the above-mentioned changes in academic regimes, and a revitalization of compensation policies were the leading axis in the recognition of the right to education for popular sectors.

Policies supporting scholarships, school meals, more integrated actions for rural education support, 'breaching' spaces or complementary institutions aimed at the access of excluded populations to the education system were developed or became stronger. In Chile the 'Preferential School Subsidy' transferred resources to schools, which were adjusted based on students' socio-economic level and related to result-based improvement plans. In Colombia the program dubbed 'Todos a Aprender' named outstanding teachers as advisors in vulnerable schools. In Mexico, the 'Escuelas de calidad' program provided direct support to vulnerable schools. In Uruguay a program called 'Maestros comunitarios' bet on renewing the bond with families. Each country followed common and differential strategies.

The result of this extensive and complex process is the movement of popular sectors from the margins to the center of education policies. Probably like never before there has been a priority investment in disadvantaged sectors, thus breaking inter-generational legacies and strongly redistributing educational resources. Even the more recent appearance of full-day schools aimed at the most underprivileged students may take this trend even further. Nevertheless, the battle against excluding social forces, discrimination and the heartrending inequality persisting in the region still has a long way to go.

3.8. Breaking the Ice Block in Teaching

Another critical trend in the 2000's was the movement of the axis set in the level and type of school management to a renewed focus on teacher policies. This was a great transformation of global approaches to education reforms, which became evident in

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several countries through the ‘breaking of the ice block’ in teachers policies that had been an axis with little change in the 1990’s.

The emergence of new assessment systems for teachers, merit-based careers, appointments by contests involving examinations and even differential payment based on the results of students’ learning were major novelties. Resistance from the unions did not take long and the region also turned into a laboratory of different styles of reforms with various negotiation outcomes, ranging from agreements achieved in Chile to the breaking-offs with unions in Peru, Mexico and Colombia. Policies related to this matter were much slighter in Argentina, Uruguay and Brazil, except for some of their states and municipalities.

Reforms, when applicable, were much more focused on teaching careers than on their qualification and training. This took place in contexts with salary increases for teachers, although with significant variations in the countries and with still unresolved debts to ensure an appropriate salary to the social value that the teaching profession deserves. Countries such as Chile, Mexico and Argentina have clearly higher salaries than Peru and Uruguay (no comparative data was obtained for Colombia and Brazil), although all of them were increased in different stages of the period surveyed.

Right after this new stage emerged a predominant conviction, which was set up as the virtuous circle of teaching. It is a comprehensive vision encompassing the need for an improved teacher training, raising social expectations of the profession, attracting the best candidates, increasing salaries for this to happen, and changing teaching courses so that merit, continuous training and professional assessment are rewarded. Beyond differences in actions and styles in the different countries, this virtuous circle of change was set up in the new discourses on education reforms.

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3.9. The New Focus on Schools: Principals and Improvement Plans

A popular trend that was finally more clearly defined during the second decade of the new century consisted of a renewed vision of school autonomy where principals play a central role. Instead of autonomy understood as a management privatization, where principals or school boards have control of the school budget and the hiring of teachers, in this new stage a concept of pedagogical primacy in institutional management gained ground.

The strengthening of training and selection of school principals as pedagogy leaders was the clearest sign of this trend, which grew in almost all the countries studied. Especially Chile moved forward with this transformation in a more consistent fashion, creating a special course for principals, with high salaries, fixed-term appointments and specific training.

Parallel to this trend, other converging logics were aimed at this very direction. Improvement plans, with their different meanings, showed a movement from the mere formality of a plan to execution itself with resources, autonomy and accountability. In all the countries analyzed there appeared similar formats, with the provision of resources to be managed with certain autonomy by principals and, in some countries, with quality

assessment as part of an improvement arrangement with conditional results (especially in Chile, Colombia and Mexico).

More pedagogy-focused principals, improvement plans, intermediate autonomy with certain resources, in-service and at-school teacher training, measurement of results, institutional self-assessments and school performance report cards were some of the initiatives that show a common trend. In some countries such as Chile, Brazil and Mexico (more partially Colombia), the publication of quality assessment results of schools added the effect of competition and public pressure through rankings, something that did not happen in Argentina, Peru and Uruguay.

3.10. The Trend of Passing from Public to Private Education and Responses from the State

Almost all the countries studied had a marked process of students going from public to private schools in this new century. The greatest numbers of such cases were recorded in Peru, Chile, Brazil, Uruguay and Argentina, in this order of magnitude. Conversely, in Mexico this trend was steady, while Colombia was the only country where the proportion of students enrolled in public schools increased. Overall the region went from 15 percent of its students enrolled in private schools in 2000 to 18 percent in 2010.

Starting and finishing points were different depending on the countries and education levels. Chile is an exceptional case: it went from 20 percent of students enrolled in private schools in 1980 to 61 percent in 2013. The financing system based on the demand benefited this continuous transfer of students, which was under intense discussion while this research was underway. New policies aiming at stopping making profit out of education financed by the state, student selection permission and co-payment of private schools were part of a political vision that intended to recover public education and reduce social segregation in the education system.

The transfer of students to the private sector was caused by several reasons that deserved a deeper analysis. One of them was the growth of the emerging middle classes, which seems to have been a key element for it allowed a number of families to pay for private school fees of various kinds, costs and quality. As a result, education systems had to face a growing social segregation between and within public and private schools.

Despite these significant changes, public policies aimed at regulating and financing education were not significantly altered during the period under study, except for the case of Chile, which incorporated new control elements to its private system. It should also be pointed out that only Argentina and Chile provide a massive financing with state resources to their private schools, while in Brazil, Peru and Colombia there are isolated experiences, and in Mexico and Uruguay there are no public subsidies for private schools.

3.11. The Great Technology Leap and 1-to-1 Policies

Latin America was in the new century an expansive region and a laboratory of education policies with an intense use of new technologies. Outstanding cases were Uruguay,

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Argentina and Peru, with the mass or universal introduction of the one-computer-per-student model. Uruguay's Ceibal Plan was the first one to become large-scale and it turned into the focus in the region.

The effect of these policies is still incipient in educational terms but was very powerful in reducing the digital gap. Under the mark of mass or universal ICT (Information and Communication Technology) equipment for all students, the intense implementation stage marked a 'before and after' milestone in these countries. In parallel, there appeared new resources for teacher training, applications and new digital contents. The challenge of equipment maintenance also became critical. Education policy entered into a new phase, where nowadays' fast-pace changes became an opportunity in various senses but still filled with obstacles.

These policies took a technological leap in an unequal race between permanent update in the private market and the slow pace of changes in education systems. The other countries under analysis also followed different paths to include ICT in their education systems. Chile consolidated an integrated strategy with its 'Enlaces' program, while Mexico went through a traumatic experience with 'Enciclomedia', a gigantic failed program. Brazil developed a number of initiatives, but ICTs were not the central axis of its education policies.

3.12. Ongoing Challenges: Expanding Early Childhood Rights, Extending School Hours and Changing Secondary Education

A highly growing trend from 1990 to 2015 was the expansion pre-primary education. In all the countries analyzed a massive creation of schools and teaching positions took place. This process was based on the expansion of the scope of social rights and on converging ideas about the importance of early education success in primary education. Thanks to these policies, early education became stronger and also took a more pedagogical approach and became more internally organic.

In recent years there was a change of direction in the concept of these policies. The development of new education policies for early childhood began turning into not only a social demand but also a priority in the long-term agenda. A new kind of actions focused on the development of cognitive and non-cognitive skills of children since birth until three years old became expanding in the region. It is still an incipient trend, but it has marked a new path for policies and it will surely change budget priorities in the coming years.

The extension of school hours was a frequent ambition over the last twenty years of education policy. Except for Chile, which turned this process into a large-scale policy in the 1990's, the rest of the region began moving forward more decisively in the 2010's. Steps taken by several countries show a path towards future growth of this line of intervention, which was expressed in recent education plan and laws.

Policies aimed at the expansion of school hours have been pretty varied in terms of their purposes, methods and contents. But it is clear that today they have turned into a common policy goal. Probably the stage of great growth of educational resources in the

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2000's allowed paying off old debts, ensuring access to education, improving teachers' depreciated salaries, and taking care of urgent needs of all kinds. Confidence in a second decade of economic growth, added to the already-attained wide education coverage allow for predicting a priority to extend school hours.

Secondary education reform has been a constant change goal over the last two decades, but it has also been one of the greatest failures in education policy.

On the other hand, secondary education reform has been a constant change goal over the last two decades, but it has also been one of the greatest failures in education policy. Progress has been slow or merely incipient. The organization of teaching positions replacing fragmented hours at several schools was an initial hurdle that in several countries has not been overcome yet. Multiple policies to change or create curricular frameworks, academic regimes, breaching spaces, tutors, scholarships and support to ensure a level expansion have been efforts that did not alter the selective pattern of academic, organizational and pedagogy structure that predominated in most countries.

During the second decade of the 21st Century, the change axis of secondary education began to be more clearly in the center of the scene. Improvement plans with an autonomous use of resources and accountability are a growing trend. The emergence of reviving practices such as project-based and interdisciplinary work using technologies; the organization of original grouping or non-graduated regimes; the creation of optional schedules and reviewing technical education in the light of technological developments are some of the explorations underway. Some states or provinces have begun with incipient experiences and it is quite probable that countries move towards more ambitious change policies in the years to come.

4. Education Results in the 2000-2015-Period

The following chapter deals with analyzing variations in educational results during the period subject to this research in the seven countries, with an introductory overview of the region as a whole. This is a reductionist outlook in two senses. Firstly because data by itself is always a portion of a complex educational universe that excludes whole areas of teaching and approaches other than those prioritized by tests. And secondly, because of the limited amount of data showed in the research, which leaves behind valuable information due to a matter of space.

The analysis of results is not intended to close the history, telling who were the winners and who were the losers or, in other words, what did they do that should be emulated by the rest. There are not easy ways and this reductionist logic is dangerous if it is taken into account that behind policy recommendations the lives of millions of students are at stake.

But such a reductionist vision is required to observe some potential relations among contexts, education policies and certain education indicators in the period under survey. From such point certain hypotheses and open questions are resumed, instead of simplified or chance explanations. Although the second reduction favored synthesis instead of a prolonged data exposure, such synthesis was based on a consistent analysis of information coming from different sources, with database processing, and a rigorous work of inter-temporal comparison of macro educational variables of the countries.

4.1. Latin America in the PISA World

The analysis of results begins locating the region as a whole in the world map, within the regions assessed in PISA tests, applied by the Organization for Economic Cooperation and Development (OECD) since 2000. This study only suggests a general descriptive outlook on education data of the region for a later deeper comparison among countries.

The region as a whole, integrated by the seven countries studied for the temporal evolution, and eight countries for the 2012 data (including Costa Rica, which took part in the 2012 edition), shows a worrying snapshot and an encouraging picture.

It should be noted that the portion of countries assessed by PISA is not representative of global diversity, and for such reason speaking in terms of country rankings is avoided. Such ranking would be inappropriate as the sample of countries is clearly slanted towards an over-representation of the most developed countries. Anyway, comparison among regions allows illustrating different situations, which are hereto presented in a summary fashion.

In the 2012 results, the region had obtained poor results compared to the rest of the participating countries. In math skills, distance was bigger compared to the countries of the PISA sample: 63 percent of Latin American students had not reached Level II, which is considered the minimum level to master essential math skills.

In the 2012 results (latest PISA edition until this study), the region had obtained poor results compared to the rest of the participating countries. In math skills, distance was bigger compared to the countries of the PISA sample: 63 percent of Latin American students had not reached Level II, which is considered the minimum level to master essential math skills. At the OECD this percentage went down up to 23 percent and in Asia-Pacific to 9 percent. Results from reading comprehension and science tests were better than those from math, but they also showed large learning flaws: only 45 percent and 49 percent of students in Latin America had reached the essential Level II skills in both areas.

However, this vision of results is limited and unfair. Measuring education requires framing it within its context. GDP, social conditions and investment per student in Latin America are considerably lower than in the other regions participating in PISA tests. Consequently, their education results are part of a development debt in broader terms and they may not be ascribed to a failure of education systems themselves.

Regarding skills distribution, it should be pointed out that Latin America is the region with the largest income inequality (measured by Gini coefficient) and, conversely, it does not stand out for its disparity in results in PISA tests depending on the socio-economic level. In a certain sense, education systems in the region seem to be less unequal than their societies.

From 2000 to 2012, Latin America was the region.

Analyzing the evolution through time (the picture vs. snapshot comparison in 2012), the region had encouraging results. From 2000 to 2012, Latin America was the region (among the regions represented by participating countries⁵). That is, it simultaneously succeeded in improving access and education quality.

This is verified through an encouraging piece of information: the quartile with the greatest poverty in Latin America attained the highest increase in learning achievements at PISA tests of all the regions compared in all the quartiles of socio-economic level. In addition, the region was the one with the greatest progress in the reduction of the equity gap in results from 2000 to 2012, thanks to the boost given to the most disadvantaged sectors.

An encouraging piece of information: the quartile with the greatest poverty in Latin America attained the highest increase in learning achievements at PISA tests of all the regions compared in all the quartiles of socio-economic level.

Expanding this general vision of results measured by standardized evaluations of learning, the United Nations Educational, Scientific and Cultural Organization (UNESCO) tests for Latin America were analyzed. The Second Regional Comparative and Explanatory Study (SERCE) tests from 2006 and the Third Regional Comparative and Explanatory Study (TERCE) tests from 2013 measured learning achievements in 3rd and 6th years of primary education. In the inter-temporal comparison, countries in the region attained clear improvements in all the tests, especially in math skills (more than language and science ones). This matches the improvement path noted at PISA tests, even with considerable differences among countries.

All these achievements are particularly remarkable within a context of expansion of access to education and improvement in education trajectories of students. Access

⁵ The following regions were compared (consisting of at least 5 countries): Latin America, Western Europe, Eastern Europe, Anglo-Saxon countries, Asia-Pacific countries, Nordic countries and OECD.

to primary education had already been widely guaranteed at the beginning of the 21st Century, but pre-primary education was the one taking a great leap ahead, from 50 percent of enrolment rate from 3 to 5 years old in 2000 to 70 percent in 2010 across the seven countries studied. In secondary education this expansion had already been quite high during the last two decades of the 20th Century, and in the period under analysis net enrolment rate went from 71.6 percent to 79.2 percent in average.

The improvement in student flow within the education system was also significant, reducing high rates of repetition in the region, especially in primary education. In average, the seven countries analyzed went from 6.5 percent of repetition in primary education in 2002 to 4.3 percent in 2011. Reducing overaged students in secondary education was harder, for it had variations depending on the countries and did not show a common trend.

The seven countries analyzed went from 6.5 percent of repetition in primary education in 2002 to 4.3 percent in 2011.

4.2. Synthesis of Results per Country

This part of the study focuses on summarizing educational results per country. To such end information about access, students' school trajectory, secondary education completion, learning achievements in primary and secondary education and education equity is used. Data about learning results measured by international SERCE and TERCE tests from UNESCO (2006-2013 evolution) and PISA from the OECD (2000-2012 evolution) was compared to results from national tests in each country⁶.

This study analyzed many sources of information and carried out its own processing. As part of this analysis, the document features a detailed analysis of the whole 15-year old population, including those individuals who were not assessed as a result of having been left outside the PISA sample framework. This kind of presentation of information expands the outlook on PISA tests and provides more support to carry out future quantitative and qualitative research in the region.

Argentina

- Its high schooling rates in primary education and high literacy rates make the country stand out as one with an already-consolidated history of access to education for at least four decades. The growth of education coverage in secondary education during the period analyzed was intermediate, starting from a high level for the region. The country remained in the block with the highest access to education among the countries analyzed.
- Students' school trajectories are placed in an intermediate point among countries analyzed, with relatively high levels of repetition and excessive age per grade. Such indicators had contradictory variations depending on the period studied: repetition decreased in primary education but increased in secondary one.
- Among education quality assessments in primary education, an improvement in math skills and a stagnation in language have been noted. TERCE tests

⁶ See an appendix on methods including the results from all national education quality tests in the countries studied here: www.cippe.org/mapeal

measurements in this level are consistent with national evaluations within the same period of time.

- In secondary education, PISA tests show steady results in the three subjects assessed in the 2000-2012 period, with a decrease in reading skills in 2006 and a recovery in 2009. Argentina's results in 2012 were similar to those of countries like Brazil and Colombia, though with a higher proportion of 15-year-old assessed students and with less individuals outside the education system. In national tests (ONE) results are consistent, although ONE highlights an improvement in language skills during the 2005-2010-period that was more marked than that noted at PISA tests.
- Equity levels at PISA test results are the least unequal ones among the countries analyzed. This achievement stands out because Argentina was –among the seven countries analyzed– the one with the greatest reduction in inequality at PISA test results from 2000 to 2012. An explanation for this fact lies in a reduction in results by the quartile with the highest socio-economic level, and a slight improvement in the other three quartiles.
- The country shows worrying signs representing students' satisfaction with schools and in pedagogical work environment at classrooms. It also has the highest student absenteeism rate among the countries participating at PISA tests.

Brasil

- Historical levels of education coverage in Brazil were the lowest ones among the countries studied. During the 1960-2010 period access improved remarkably, succeeding to equal standards in the region around those years. In many senses, the Brazilian education system is quite young in terms of its ambition for coverage universalization.
- Students' school trajectory went through a similar situation to that of coverage. Historically there were high levels of repetition since the first year of education and in the period studied, problems related to overage were considerably reduced. But such improvement was not enough to allow Brazil equal the rest of the countries analyzed, given it continues to have very high percentages of overage students in secondary education.
- Students remain in the education system despite having repeated grades, but the country's secondary education graduation rates are not as high as its ratio of 17-year old individuals attending school.
- In terms of learning quality measured by standardized tests, Brazil shows improvements in language and math skills in secondary education at SERCE and TERCE tests from 2006 to 2013, consistent with national tests. Although national tests correspond to 5th year of primary education, there is a clear improving trend from 2001 to 2011.
- In secondary education trends show certain differences depending on the sources. At PISA tests, Brazil achieved continuous improvements from 2000 to 2012 in reading, math and science evaluations, stagnating in 2012, although these results are methodologically questionable (some studies show that improvement in PISA is also verifiable in math skills). In national tests language improvement was very slight, matching to some greater extent with PISA results, but in math skills a stagnation has been noted (while PISA tests show a continuous

improvement in the period analyzed). Brazil also shows stagnation in quality results from national tests in the last year of secondary education both in language and math skills during the 1999-2011-period.

- Regarding equity in PISA results, Brazil succeeded in slightly reducing the gap between students with higher and lower socio-economic level, and it also managed to reduce education segregation; but both indicators started from very unequal situations and they remain at such level.

Chile

- Chile, similarly to Argentina, shows a historical achievement in terms of coverage, which kept an upward trend during the period analyzed. Although from this higher position, improvements (such as that in secondary education enrolment rate) were marginal.
- Chile's case stands out especially due to its achievements in education trajectories of its students: it is the country with the lowest repetition rate, higher retention and completion rates in secondary education of all the countries analyzed. In addition, during the period studied it managed to improve such indicators.
- In terms of learning, the various tests show contradictory evidence in certain cases. SIMCE (national assessment) tests showed a slight improvement consistent with SERCE and TERCE tests in language skills, but in math ones the TERCE improvement was much higher than that of SIMCE (which even shows a decreased punctuation in 2013, after a slight improvement in previous years). It should also be made clear that the SIMCE measurement of 4th Basic Year was taken into consideration (while TERCE measures 3rd and 6th years).
- PISA results showed an improvement higher than that from SIMCE for similar years. In reading skills, Chile improved at PISA tests from 2000 to 2009, but it did not do so at SIMCE tests that measured basic education 8th year and secondary education 2nd year. In math skills, Chile improved both in PISA from 2000 to 2012 and in TIMMS from 2003 and 2011, but at SIMCE tests this improvement was slighter, and only in Low Secondary Education 2nd year, but not in Basic Education 8th year. In science skills, improvement was consistent with PISA, TIMMS and SIMCE tests.
- The various above-mentioned evaluations have different methods, but observing differences in results is striking. It could be especially expected that schools had more incentives to teach in line with SIMCE test, which is the one defining certain incentives for responsible parties. Paradoxically, improvements at TERCE, PISA and TIMMS tests were higher than those recorded at SIMCE ones. This leaves a number of questions that other research studies may address.
- Regarding equity results, the gap among socio-economic levels at PISA tests had a slight decrease, but it continues to be one of the highest among the countries studied. The country also has a very high education segregation level that was not reduced from 2000 to 2009.

Colombia

- Starting from great historical schooling deficits, Colombia improved its coverage during the last years of the 20th Century, and especially during the period studied, but the country still has the lowest enrolment rate in pre-primary education among all the countries analyzed.
- Colombia succeeded in reducing the level of repetition in primary education, but it remained steady in secondary education during the period surveyed. Overage student population in secondary education reached very high levels, and secondary education completion is low compared to the rest of the countries.
- At education quality assessments, results were mixed. At TERCE tests the country attained improvements in terms of learning achievements, but they were lower than those of the region. In language skills there were no significant improvements, as it did happen in math and science. This is partly consistent with results from national tests (called SABER) that showed stagnation in all the areas assessed in primary education until 2012.
- Colombia only participated in PISA tests in 2006-09-12, and for such reason its evolution is harder to be assessed because it is shorter. In 2012, its results were similar to those of Argentina and Brazil, although with a higher proportion of 15-year-olds out of school. In the 2006-2012- period it achieved slight improvements in reading skills from 2006 to 2009, and steady results in math and science. SABER tests show a relatively similar stagnation trend and slight progress and backward movements in all the subjects assessed.
- In equity results from PISA tests, the gap between the highest and lowest socio-economic quartile did not show any significant change. However, Colombia stands out as the only country that increased its rate of students registered at public schools of all the countries subject to this survey, which may have resulted in a reduction in education segregation, although this may not have been measured by statistics available.

México

- Mexico achieved a significant increase in coverage in all its education levels, but especially in pre-primary education, with the highest coverage among all the countries studied.
- Students' school trajectory has two outstanding features: low repetition rate and high exclusion rate in upper secondary education. This turns this education system into an exception among countries analyzed given the high ratio of 15-year-old students outside such education system, which is the benchmark of the population analyzed at PISA tests. At 17 years old, the population is mostly out of school and those who remain have lower levels of overage than the average in the countries studied.
- At education quality tests in primary education SERCE and TERCE results show continuity and differences compared to national evaluations. At SERCE and TERCE tests a slight decrease in language skills from 2006 to 2013 has been noticed in 3rd year, stagnation in 6th year and slight improvements in math in both years. Overall results show a very slight improvement, lower than that of the rest of the region. Results from the EXCALE test are closer to those from

SERCE and TERCE (it is a sample test with the same goal as TERCE, that is, measuring systemic results). Conversely, ENLACE tests (designed to measure results in each school) show different results: their remarkable improvements in language contradict SERCE and TERCE results in such area.

- At PISA tests there are certain coincidences with national tests. The most outstanding aspect in the Mexican case consists of differences with PISA in terms of the evolution of reading results, which remained relatively stagnant during the entire period analyzed, and in math skills, which recorded a significant improvement. This has been confirmed at ENLACE tests (where even a decrease in language skills has been found in 3rd year), although in these tests math improvements continued to have a growing trend until 2013, while at PISA tests they remained stagnant from 2009 to 2012.
- Regarding equity in results depending on social contexts, Mexico stands out for being the country in the region with the lowest gap in PISA results between the highest and lowest socio-economic quartile (although it should be pointed out once again that it is a country with the highest ratio of students that are not represented at PISA tests for being out of school), with a decreasing trend in the period surveyed.

Perú

- Peru is an outstanding case given its progress in education coverage. From starting points lower than those in other countries analyzed, it managed to reach high levels, but with big social gaps, especially in the pre-primary education level.
- The country succeeded in reducing its repetition rate in primary and secondary education, and it has a relatively lower overage rate than the rest of the countries studied. Right after Chile, it is the country with the highest graduation rate in secondary education, although it should be highlighted that Peru has one year less of schooling (students complete their secondary education at 16 years old, similar to Colombia, while in the rest of the countries analyzed they complete such stage at 17 years old).
- Improvement in learning results among Peruvian students was remarkable. At SERCE and TERCE primary education tests, it was the second country among the 15 participating ones (right after Ecuador) with the highest average score increase in 2013. Improvements took place in all areas assessed, although differently from other countries that had a more remarkable progress in math skills, Peru achieved very significant improvements in reading.
- These results are consistent with 2nd year national tests, although a higher evolution in reading skills than in math ones in these tests is not verified at TERCE tests, where progress is similar in both subjects (and even slightly better in math).
- At PISA tests, Peruvian improvement was also remarkable, starting from a very low position in reading tests. Math and science tests are not strictly comparable from 2000 (Peru participated in 2001) to 2002, but it has been noted that the score confirms a similar growth to that of reading tests. There are no national tests for secondary education to compare these results.
- Regarding equity in results, worrying indicators were found. Peru was in 2009 the country with the greatest social segregation among schools of all countries participating in the PISA test on such year, and it was the only country out of

the seven analyzed ones that saw an increase in the gap of its results between the quartiles with the lowest and highest socio-economic level. This shows that the country achieved a quality improvement, but at the expense of increasing its inequality.

Uruguay

- The country has high historical enrolment rates compared to the rest of the region, and it managed to move forward particularly in its pre-primary education level throughout the period studied, but it had a very slight progress in terms of access to secondary education.
- Its repetition rates are the highest among the countries surveyed in both education levels, although they were reduced in primary education. In lower secondary education repetition rate increased in the period analyzed, while at upper secondary education it remained the same.
- These high repetition rates are translated into the highest overage rates at 17 years old among the countries studied, together with Brazil. Also Uruguay has high rates of students leaving school before the legal age in secondary education, turning the country into the one with the lowest graduation rates among all the surveyed ones.
- At SERCE and TERCE tests learning results in primary education showed a general stagnation, with low levels in language, math and science skills in 6th year. Uruguay was, right after Costa Rica, the country with the lowest progress in tests out of the 15 participants. However, its relative position continues to be better than most countries.
- At PISA tests, Uruguay had a slight statistically significant decrease in all three subjects under analysis. From a scenario with better results in 2003 than all the other participating countries in the region, it remained in 2012 below Chile in all subjects, but above most of the other countries.
- In terms of equity results, result gaps in PISA tests between the quartiles with higher and lower socio-economic levels remained the same throughout the period analyzed, and they were the second highest ranked in the region after Peru.

5. Hypotheses: How Could Different Education Results be Explained?

The study conducted aimed at mapping education policies implemented and observing education results, but without intending to explain causes of these results as its central goal. In case the purpose of the study had been the latter, the work would have required another methodology considering the huge complexity of this task. Quality assessments are a chance to understand some education dimensions, but abusing them may obscure some other key ones, which would be less evident or more hidden within data available.

For such reason, this work warns about benefits and hurdles involved in comparative assessments of education quality. Even during the intense collection and comparison of sources, inconsistencies deserving further inquiries before making conclusive statements about the paths followed by education systems in the region were found. With such ethical and methodological precautions, the study carried out allowed developing exploratory hypotheses that do not aim at becoming newspaper headlines, but thoughtful outlooks to continue deep, sensible, plural and rigorous discussions about the improvement of education in Latin America. Below such hypotheses are exposed synthetically.

Hypothesis 1: The improvement in inclusion and education quality was associated with remarkable improvements in life conditions of the Latin American population

Overall countries under analysis improved their education coverage, students' school trajectories, learning and education equity indicators during the period surveyed. The first hypothesis associates these achievements with improvements in social and economic conditions of the population during the period of this study. The fact that at least 50 million inhabitants in this region lifted themselves from poverty from 2000 to 2010; their income growth, unemployment decrease; and an increased access to food, housing, utilities and basic assets experienced by the population were notable during the new century.

Also generational changes in education seem to have been central for the improvement noticed in the population subject to this research, that is, students attending school in the 2000-2013-period. Their parents' access to education widely exceeded the one that the parents of other students had had in previous decades.

The remarkable increase in access to pre-primary education is also deemed as a central axis for the improvement in education during the period analyzed, and it predicts even better results in the future, since it has continued to grow in recent years. The consequences of social and economic improvement in life conditions

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during early childhood could be considered equally or even more important as the access to pre-primary education.

Together with the improvement in all social and economic conditions, this could be one of the explanations of Peru's progress in students' school trajectories and learning achievements during the period studied. Teenagers aged 15 years old who took the PISA test in 2001 had been born in 1986. For many of them, during their first years of life they lacked basic nutrients and they experienced minimum health and housing conditions. Whereas students who took their test in 2012 had been born in 1997. Their childhood saw better conditions, as well as their subsequent life cycle, in a country that achieved a great economic growth during the period of this study.

This long-term outlook is key to understand test results, which depend on a full life cycle, and even inter-generational cycles of the parents of students surveyed, that is, more than one short-term political cycle that coincides with two editions of one such assessment.

Education improvement experienced by other countries also had a significant social component, especially in those countries with marked social improvements compared to the history of past generations. Brazil is a peculiar case that highlights this hypothesis.

Argentina and Uruguay instances are a case of their own: they went through clear economic and social improvements but their education results at PISA tests did not get better, though Argentina did have a slight improvement at TERCE tests. Uruguay even had a backward movement in terms of learning achievements at PISA tests⁷ and it was one of the two countries out of 15 from Latin America that did not record any improvement at TERCE tests.

The social and economic crisis situation prior to the economic growth experienced after 2003 may be a possible explanation for more complex social phenomena indicating the legacy of social fragmentation in these countries. In turn, the impact of the economic improvement cycles on countries with a larger structural poverty (such as Peru and Brazil) seems to be different than that experienced by countries with a better relative situation of their population (such as Argentina and Uruguay).

This appears to have been a common feature in Chile, Brazil and Mexico, which in such order of importance attained improvements at TERCE and PISA tests in the average of all the subjects and years studied.

Hypothesis 2: Policy devices focused on learning and results had a stronger impact than 'spray and pray' incremental policies

The first great hypothesis of the specific effect of education policies is that a portion of the improvement in certain countries was the result of better governance policies in their education systems. Policies focused on succeeding in having certain education policy devices focused on learning results of students seem to have been key in this direction. This appears to have been a common feature in Chile, Brazil

⁷ A methodology aspect that leaves doubts about PISA tests in Uruguay is associated with the distribution of schools depending on socio-economic levels from the sample taken by PISA. This is further analyzed on the book, together with other method considerations that highlight potential inconsistencies in measurements.

and Mexico, which in such order of importance attained improvements at TERCE and PISA tests in the average of all the subjects and years studied (with significant internal differences that are analyzed in the book).

The emergence of school assessment systems through student tests was a new leading mechanism in these countries. It put pressure based on results, made the achievements of each school visible, created concrete incentives for the improvement (based on what such tests measured) and drove a state remote governance method. In huge and decentralized countries such as Brazil and Mexico, this seems to have been an efficient mechanism to succeed in setting up new incentives for schools to be focused on learning.

In Chile this effect was combined with many incentives in its education system regulated as a market, given the number of private schools and the state-funding mechanism based on the choice of schools by families.

These countries changed their education “contract” between the State and schools. The focus on results came hand in hand with various policies depending on each country: pressure based on demand and results, support to schools with poor results, rewards to municipalities and intermediate governmental entities with improved results, among others. Tools used coincided in essence: aiming at getting at the end of the road until affecting students’ learning outcomes.

On such road a reductionist version of education came into play, with risks that are being weighed up in each country: stigmatization of poor schools with low results, competition instead of collaboration between schools and teachers, perverse incentives such as expelling students to achieve better grades at tests, teaching-to-the-test instrumentalism and/or curricular conquest in subjects assessed.

In many cases, tests were combined with a reassessment of the pedagogical role of school principals, with the creation of improvement plans with autonomy for the use of resources and result-based ‘agreements’. The focus moved from state normative command to a shared responsibility for results with schools.

Uruguay and Argentina followed different paths. They did not focus their policies on incentives or a centralized governance of the system by standardized evaluations. They were more flexible on schools, that is, they did not politically agree to use economic incentives to regulate the behavior of teachers and schools.

This did not mean that the education agenda in both countries was at a standstill. On the contrary, both countries, together with Brazil, were the ones with the highest increase in education investment in the period analyzed. But multiple policies implemented did not succeed in modifying traditional governance devices, creating a new one or pinning all the strength of their intervention on results. These were incremental policies, they provided many new resources for schools, but they were applied on the ‘spray and pray’ model, expecting them to have effects by themselves.

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Hypothesis 3: Textbooks and basic curricular guidance seem to have created a 'plier' effect together with tests, which drove learning improvement

Another central hypothesis about the importance of interventions in education policy in learning results improvement is the one related to a proliferation of curricular materials for teaching and learning. Particularly free distribution of textbooks increased to a large extent in countries such as Brazil, Peru, Chile, Mexico and Argentina, in this order of importance. Starting points and policies were very varied, but in concrete Latin American classrooms were filled with texts designed for teaching and learning, which created a bigger focus and a basic curricular ground.

Compared to a trend for curricular reforms based on general documents from the 1990's, many of them abstract and encyclopedic in nature, in the new century policies that provided more concrete guidelines for teachers increased. Many reviewed policies aimed at this direction, acknowledging both teachers' demands (their scarce time to prepare classes, their request for a 'realistic' pedagogical support) and their training flaws.

Very slight improvements recorded in Colombia at TERCE and PISA tests may have been limited by this factor, as said the country there were no curricular guidance policies or a mass distribution of textbooks by the State, at least until 2012. Mexico already had universally distributed textbooks before the beginning of the period analyzed and, even increasing the number and quality of books, perhaps this did not have such a differential impact during the period studied.

Conversely, the rest of the countries surveyed had active policies designed to distribute textbooks that recorded a remarkable growth in the new century. Could this be one of the explanations for Peru's improvement, that is, a country where it was possible providing students with resources such as textbooks that historically the education system did not have? Since Peru did not implement centralized assessment devices at schools in a massive fashion, could the social and economic improvement hypothesis combined with textbooks provision, as well as other more specific policies, be an explanation for the country's improvement in national, TERCE and PISA tests?

In some countries textbooks and other parallel materials had a 'plier' effect on education quality. Together with the learning assessment that measured results per school and put pressure on accountability, textbooks created a reliable and practical curricular ground. This seems to have been the secret behind education reforms in Chile, Mexico and Brazil, where textbooks and evaluations became more sizeable and convergent.

Could these 'pliers' be the major explanation for improvement in education quality in those countries, despite their disparity? Could also textbooks and other materials have contributed to a second layer of governance (the first one being tests), making an active use of a central device of education policy that has a history of its own and created a direct channel to pedagogical practices? New research efforts may resume this path, concretely analyzing which materials were distributed, what

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differences there were depending on education levels, how such materials were used, what was the quality of their contents, and how they regulated or opened new possibilities for pedagogical work among teachers.

Hypothesis 4: Disadvantaged sectors went from the margins to the center of the system and their rights were translated into access and learning achievements

Learning results of the poorest students improved even more than those of the average population and those of the quartile with the highest socio-economic level at PISA tests from 2000 to 2012. Countries that succeeded in reducing this gap at PISA tests were Argentina, Mexico and Chile, in that order, and slightly less Brazil. Simultaneously, countries attained great progress in education coverage, an achievement that integrated to the improvement in equity becomes even more remarkable: students who probably were the first ones in their families to ever attend secondary education schools, at the same time took ‘steps into the unknown’, and succeeded in improving their learning even to a greater extent than those who were already within the system.

The combination of the first three hypotheses was critical to improve not only quality but also equity. The first one is evident as mentioned above. The second and third ones seem to have had a greater impact on the poorest sectors, since quality assessment policy devices and mass provision of curricular materials create a systemic balance effect. Such balance provides a ground for obligations and support, focuses on the most vulnerable schools in terms of results, operates more strongly on those that were adrift or in classrooms where teachers had less resources or capabilities. In general those schools and classrooms are more related to poverty because teachers with the highest qualifications have the chance to choose in which school to work, and the poorest schools are a rarely chosen destination.

Boosting these policy mechanisms and ensuring systemic governance had surely effects on equity and had an even greater improvement for disadvantaged sectors. But there was another group of social and educational policies that may have had a great impact on the achievement of reducing learning gaps, at least in the above-mentioned countries. This is a set of policies against social inequalities, which were present in all the countries with different agendas and intervention models. They were possible given the increased investment in education across the region, which had an impact on social and education programs, on school infrastructure and students’ meals, among other key components.

Was Argentina a country where such policies had a special impact because in such country there was no change in school assessment, but an expansion of textbook distribution? It was clearly one of the countries that emphasized the most on policy agenda for the benefit of the most vulnerable sectors –with measures ranging from its Universal Allowance for Children initiative, its conditional transfer program with the greatest coverage in the region, up to multiple national and provincial education actions.

Boosting these policy mechanisms and ensuring systemic governance had surely effects on equity and had an even greater improvement for disadvantaged sectors. But there was another group of social and educational policies that may have had a great impact on the achievement of reducing learning gaps.

Establishing hypotheses per country is very difficult; there are too many factors at stake. Some of them include understanding education dynamics of middle and upper classes, which for instance in Argentina had reduced performances, while the rest of the population had steady or slightly improved results at PISA tests. Brazil also had a vast array of education policies to tackle the huge social inequalities in the country. Equity improvement was not so high because its system recorded an overall improvement, but in the learning of the poorest quartile such improvement was higher than that of Argentina at PISA tests. Probably in Brazil parallel dynamics had a double effect (systemic improvements and improvements in the most disadvantaged sectors).

Making any statement in this sense is very tentative. Future research efforts will have a long way to go.

Hypothesis 5: The region had a greater improvement in primary than in secondary education, where education policy mechanisms have a lower regulation of teaching

SERCE, TERCE and PISA tests are not comparable in strict terms because they apply different methods. But the improvement recorded at TERCE tests compared to SERCE ones seems to have been more generalized than at PISA tests, and more homogenous among participating countries. This may have been the result of the primary education having a more steady structure where devices such as assessment and mass distribution of materials, as well as other policies, seem to have an effect on their practices in a more marked way than in secondary education.

The hypothesis in this case shows that primary education seems to be more governable through education policy. Its teachers are integrated to the same school with a principal in charge and this provides more conditions of institutional strength to become acquainted with policies. Many of the actions implemented by these countries tended to strengthen school unit with improvement plans, result-based incentives, remedial programs, pedagogical focus on principals, practicing teachers training in teams, among other measures. These actions have a more consolidated 'soil' at primary education schools than at secondary education ones, where a large portion of the previous trajectory is precisely creating such institutional ground.

Apart from those organizational features distinguishing both levels, secondary education, with its different forms depending on each country, has experienced a transformation process in its selective original mission to become universal. It is very probable that this process created resistance and confusion that made intervention of education policies even more complex. This, combined with the complicated social issue of the youth in the region, seems to have worked as a border with a difficult permeability for education policies.

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Hypothesis 6: Ensuring education trajectories overcoming repetition seems to be associated to quality improvement and studies completion

A hypothesis that connects students' school trajectory with their learning achievements is the positive effect shown by those countries that succeed in reducing repetition without causing exclusion or separation of students. The correlation among countries with a high graduation rate in secondary education and low repetition rate is very significant, which seems to indicate that it is key to ensure a timely trajectory with a group of peers for students to get their diplomas. Repetition, sooner or later, means a failure and predicts the expulsion of students without reaching the expected end of the road.

This evidence is not new—several studies have shown the harmful effect of repetition on students' self-esteem and on their motivation to continue attending classes. The idea of repeating courses all over again is expensive in terms of public investment, reductionist in pedagogical terms and little effective in terms of results.

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Hypothesis 7: The hypotheses of change through teaching and new technologies are too recent to be taken into account as an axis to explain learning improvement

The breaking of the deadlock in teaching policies does not seem to have a clear impact on results measured as quality and education equality during the period studied. At least that is a general vision arising from a country comparison. Reforms in teaching careers in Mexico, Colombia and Peru were difficult, partial, they moved backward and had little clear effects on the improvement of capabilities of teachers. It would be too early to assume that those processes explain the improvement in results in those countries, although they are likely to have an impact that could be noticed soon thanks to a better regularity of procedures to access teaching positions.

On the contrary, Chile is a different case, where teaching policies had a more comprehensive, gradual and agreed-by-consensus approach, especially until 2010. It was the only country surveyed where teaching appears to have turned into a much searched for profession for its improved salary and more attractive career. Assuming that such processes explain results of Chilean improvement is as hasty as stating the opposite. They have surely begun to influence the work at the classroom and their continuity might predict an improvement sustainable through time.

Something quite similar could be said about the countries that took another path through mass distribution of computers among students. Uruguay, Argentina and Peru implemented policies including an intensive use of technology, and their impact on learning seems to be distant ahead yet, although there are some positive signs in some impact assessments.

Chile is a different case, where teaching policies had a more comprehensive, gradual and agreed-by-consensus approach, especially until 2010.

Hypothesis 8: Chile shows that a continuous and sequenced progress in several central axis of the education policy had the capacity to create improvement from an initial situation above the regional average

Chile stands out for having achieved improvements since its higher starting point than the average one in the region. Different from other countries in the southern cone such as Argentina and Uruguay, to which Costa Rica could be added, with education systems with an earlier and stronger development, with better results than the average at UNESCO's First Regional Comparative and Explanatory Study (PERCE) in 1997, and similar achievements at PISA tests in 2000/3, Chile managed to strengthen this improvement through time. It was not affected by what in these three countries could be called 'altitude sickness': a stage where from a historically strong legacy systems enter a stagnation phase resulting from great social changes and a lack of strategic policies to re-boost teaching and schools towards new challenges.

Chile appears to have found an appropriate sequence to create an improvement process. Explanations are multiple. Curricular reforms, textbooks, teaching frameworks and school management, among other actions, have been constantly focused on teaching. SIMCE has been a pressure factor for demand and supply, with many incentives to improve results measured by tests. The extension of school hours turned Chile into the country with the largest amount of weekly hours of language and math classes out of the 65 participants at PISA tests. There were some key policies such as SEP, focused on the most vulnerable populations with resources and improvement plans tied to results, or training and selection of principals, with a limit on time and measured per results.

The fact that all these policies have been convergent is highly dubious. Interventions are always mixed with contradictions and backward movements. Again, the fact that all of them have been ethical in the way they treated teachers and schools, filling them with external incentives is a matter that has been much discussed in the country. Even SIMCE itself has been highly criticized for its rankings and pressure to teach for test purposes.

But in the convergence of policies, Chile stands out in the region for having achieved the greatest strength in its key policy mechanisms: assessment, curriculum, materials and teaching career. Schools have been more focused on learning as a result of this combination of support and incentives. For such reason the country seems to have found a way to move forward from a higher starting point, and considerably expand its distance from the rest of the region participating in international tests.

All these do not close the story, they are simple possible interpretations from a compared regional view. Chile also remained throughout the period studied as one of the countries with the greatest social and education inequalities, expanded across an increasingly private education market, segregated based on socio-economic level and the capacity to make differential payments of private schools, whether receiving subsidies from the State or not. To all these ingredients should be added an uneven higher education level with a very expensive access for students, which led to a resistance movement from students that gave rise to important discussions on education policy.

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Hypothesis 9: Brazil shows that it is possible to improve coverage, flow and education quality, as well as policies to extend rights, boost local initiative and control results in a centralized way

Probably one of Brazil's greatest achievements is having found a formula to coordinate education improvement in a huge and decentralized country divided into 5564 municipalities and 27 states. This process began in the 1990's and had a central axis focused on change during the period studied, with Lula and Dilma's successive administrations.

This mixture of policies was a sign of the times. It consisted of an 'ambidextrous' government logic –on one hand, it succeeded in applying its own historical mark of ensuring rights, boosting transfer to the poorest sectors, and redistributing power in a classist society; on the other, it drove centralized tests through IDEB, which rates from 1 to 10 each school and municipality in the country, with economic incentives for improving.

But, how much did Brazilian education quality actually improve? It is hard to tell. National and PISA tests do not match in several of their result cycles. At IDEB improvements were much more remarkable in terms of flow than in terms of quality, but with great differences between states and municipalities.

What has been really clear is that the country created a deep education change. The focus on learning was a constant that started from policy devices: assessments, improvement plans and textbooks. Each school knows its results, and new incentives have been applied to boost this improvement.

Teaching policies, except for some states, were an aspect with a lower progress. So were changes in secondary education, the heaviest weight for reforms. Certain stagnation at PISA tests from 2009 to 2012, and at national tests as well, also gives the idea that an improvement cycle was possibly trapped in a plateau.

Hypothesis 10: Despite all of the above, there were not so many changes in pedagogical organization and the direction of education in the countries, which shows a slow pace of improvement and opens challenges for the future

How much did education in Latin America change and improve? Achievements attained in the period surveyed should be fully appraised: it was a collective effort from thousands of schools and millions of teachers, students and families. Education policies and public funding also played a central role. The State managed to provide more education opportunities than ever in the history of Latin America. Thanks to an increase in education investment several of the actions outlined so far came to fruition.

But behind such progress there are unresolved debts. Education did not actually change. Education systems continue to be unequal in most countries, and they have a low impact on the development of capabilities for students to act on and define

their future. Pedagogical practices were kept on a layer with great dispersion and huge flaws to encourage studying, enthusiasm and a great fruitful relationship with knowledge among students.

It is not possible determining how much impact had education policies during the period studied. Hypotheses discussed so far are strongly supported, but they require much research to be verified. Probably much more than what is usually assumed was defined by the social and economic improvement of the population, leaving the concrete impact of policies analyzed in the background.

A sign showing this is the fact that the hardcore of pedagogy remained firm: homogenous methods, based on group standards; traditional classroom assessment systems; dispersion of didactic practices, and their low level of scientific grounds; compartmentalized secondary education filled with encyclopedic subjects. The introduction of families' experience and work integrated with the community continued to be avoided, as they had been since the origins of education systems in the region.

Policies probably had a lower impact than what had been expected. Perhaps the role of the State in education in the region should be thoroughly rethought. The improvement pace is slow and education systems are little permeable to change. A review of pedagogies and the very sense of the school is an effort that is still far from being done.

6. The Future of Education in Latin America

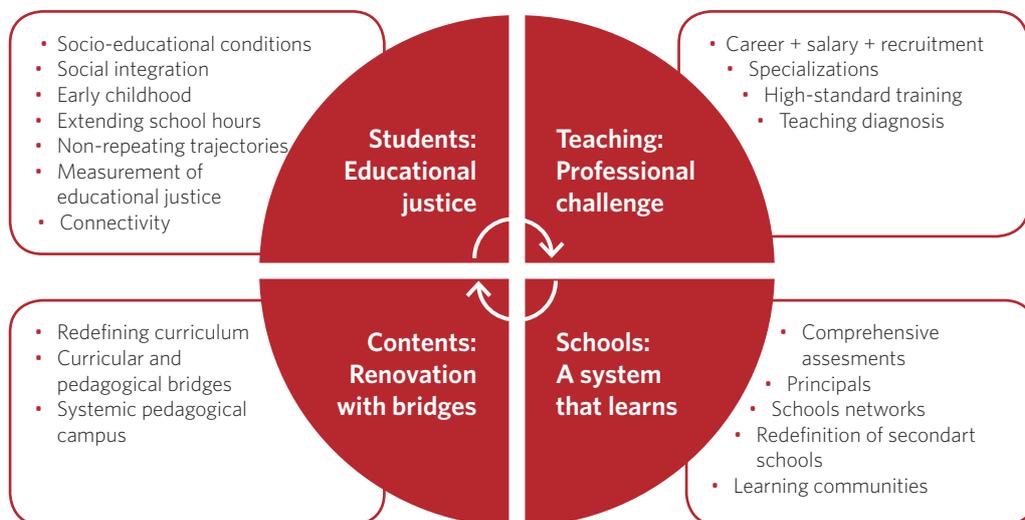
At the end of the document future perspectives for education in the region are presented. There a close connection between the economic development model, social integration and democratic civil responsibility and governing principles and purposes of education is set out. Each country should take on the challenge to establish what type of individuals they aim at forming through their education systems. It is not this document's task replacing social and political discussion of these countries about the above-mentioned dimensions.

Therefore, final suggestions are in line with general common principles that require multiple adaptations depending on the different contexts. A vision of education as a promoter of social justice leads such general principles, as a source for the creation of capabilities to freely act in democratic societies.

This document sets forth a set of central strains that should be discussed to face new paths to be added to the efforts made in previous years. Latin American societies have the chance to take advantage of the demographic dividend, a time when making an increased and improved investment in education will be key to achieve a qualitative leap to have an impact on social improvement.

From such perspective four circles of improvement and change in education are suggested, which are displayed in the following diagram. Suggestions for education policy are based on the learning left by this research, on international literature about systemic education improvement and on criteria of expansion of the spheres of educational justices in education systems.

Four circles of improvement and change in education



The **first circle** sets out fairness in education for **students**, based on the redistribution of resources to guarantee quality teaching, social and educational integration at public schools; a comprehensive strategy for early childhood involving large budget reallocations; planning extended school hours rethinking institutional projects; the protection of students' school trajectory to avoid repeating courses and leaving school, especially in secondary education; measurement of resource distribution among schools to revert social gaps; and universal connectivity of schools as a base for future actions.

The **second circle** sets out **teaching** to progressively turn into a professional challenge, with a comprehensive vision of improvement in training, recruiting, career and working conditions. This involves promoting teachers with good salaries who go through a rigorous training process, and who have a horizontal career with differentiated salaries based on their own specialization instead of students' exams. This circle considers the importance of placing at the center of permanent training pedagogical renewal with systemic practices of horizontal learning among peers. The pedagogical matter should not be underestimated: training contents are as critical as incentives in the teaching career.

The **third circle** addresses the renewal of **curricular contents** and capabilities to be attained by students. A comprehensive revision of all the skills and competences to be taught is a task requiring a deep redefinition facing the future. In order to avoid falling into the abyss, it is suggested to create curricular bridges connecting schools and teachers' skills with the renewal of learning formats and contents. On this path, creating a new pedagogical voice appears to be critical through a universal pedagogical campus redefining the role of the State in education, creating new steps in mass dialogue and using analytics to create bridges towards improvement and change in education.

The convergence of the different units of curricular and pedagogical planning of the State with professional teams that are strong, refreshing and enthusiastic is a critical axis in the circle of change. Among other consequences of such convergence the revision of distribution of textbooks and other materials stands out, thus valuing teachers' pedagogical autonomy with support creating thoughtful guides and high quality practices for teaching.

The **fourth circle** suggests looking at **schools** as part of a system that not only teaches but also learns permanently. Quality assessments may be a key tool to learn about what happens at each school, with a comprehensive look focused on pedagogical improvement, instead of the short-term and competitive in terms of results. Boosting school principals for them to be the pedagogical reference authorities for projects in a constant search for improvement and transformation is another essential axis. This would allow driving permanent training at schools with principals encouraging ongoing reflections among peers, progressively creating school networks and horizontal systemic learning.

Policies and pedagogies would have a joint challenge of changing teenagers' experience at secondary education schools and redefining the links with the world of labor to develop capabilities to act with autonomy and multiply the potential futures of students. The creation of learning communities is a way to strengthen the role of families

within the education system, another critical item in the redefinition of schools. Lastly, a vision of education beyond schools is provided, expanding the borders of education policy especially from the new possibilities of giving an educational sense to cultural and technological ecosystems in full transformation.

A final reflection looks forward to pointing out the lessons learned: it is necessary to use policy devices to improve education; more funding and incremental policies are not enough.

Policy devices are a concept that summarizes a vision on education policy based in two dimensions:

1. The capacity of systemic institutionalization that takes advantage of flows and incentives powerful enough to massively install practices in schools.
2. The orientation to results and concrete effects in practices, through mechanisms of assessment and systemic collection of the actors' vision (at this point, digital analytics would enable great transformations).

This study proposes to add three additional dimensions to these two, in order to reinforce a vision of education policy with capacity of systemic impact:

3. To put curricular contents, pedagogies and sense of education in the center: policy devices must have a clear convergence and a renewed pedagogical vision.
4. To generate ethical adhesion by teachers (positive pressure), since monetary incentives are not powerful enough to generate an effect of pedagogical identification with changes.
5. To have social justice as a north, through the redistribution in favor of the most disadvantaged and the recognition of cultural diversity.

Creating movements of systemic educational change would be more possible than ever before since the origins of modern education systems. It would require immense transformations in education policy state management cultures. This document aspires to be a step forward in that direction.

It is necessary to use policy devices to improve education; more funding and incremental policies are not enough.

About the Author

Axel Rivas specializes in the identification, diagnosis and analysis of educational issues from a comparative perspective. He holds a PhD in Social Sciences. He is Principal Researcher of CIPPEC's Education Program and Director of *Las 400 clases*, a website of educational videos. He is lecturer at Universidad de San Andrés (UdeSA), Universidad Torcuato Di Tella (UTDT), Universidad Pedagógica de Buenos Aires (UNPE) and FLACSO-Argentina. He has been consultant of the International Institute for Education Planning (UNESCO), UNICEF, PNUD, World Bank and IADB, and of several national and provincial governments. He is author of 9 books (the most recent is *Reviving Classrooms*) and of more than 20 articles on education policy and comparative education.

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* <http://cippec.org/mapeal/>

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Center for the Implementation of Public Policies Promoting Equity and Growth (CIPPEC) is a private, non-profit organization that strives to create a more just, democratic, and efficient State in Argentina to improve the quality of life for all Argentine citizens.

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