LATIN AMERICA'S EDUCATION SYSTEMS IN COMPARATIVE PERSPECTIVE, 1945-2021: PATTERNS AND PUZZLES

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Before we develop a political economy theory of education, we must first identify the main educational patterns and puzzles that require an explanation. This chapter does just this—it provides a strong empirical foundation for future research into Latin America's education systems. Leveraging cross-national datasets that enable us to compare Latin America with other regions, we begin by showing that Latin American countries generally perform well on measures of access to education but underperform in students' math and science skills, even compared to countries of similar GDP per capita. We then examine three potential political economy explanations for this skills deficit: one, education systems in Latin America emphasize teaching political values more than skills; two, strong teacher unions prevent meritocratic teacher hiring and lead to teachers being poorly qualified; three, education spending is too low. Our analysis suggests that the emphasis on political values is unlikely to explain the region's underperformance in skills. On the other hand, we do find evidence that teachers in Latin America have lower educational qualifications, but we do not find support for the conventional wisdom that strong teacher unions contribute to this; if anything, stronger teacher unions are associated with higher qualifications. Lastly, although Latin American countries devote a higher fraction of their GDP to education than other developing regions, the distribution of spending in the region remains regressive, favoring universities over primary and secondary education.

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Before we develop a political economy theory of education, we must first identify the main educational patterns and puzzles that require an explanation. This chapter does just this—it provides a strong empirical foundation that sets the stage for the remainder of the book and for future research on the political economy of education in Latin America and the rest of the world. Any political economy theory of education should explain—or, at the very least, be consistent with—the patterns we document here.[3]

We identify patterns and puzzles that are unique to the education systems of Latin America by bringing together multiple cross-national datasets to compare countries not only along common measures of educational access, students' skills, and education expenditures, but also along two key aspects of education systems which have received less attention: the content of the curriculum and the characteristics of teachers and teacher unions. While the curriculum and, especially, teachers have been the subject of numerous reports focused on education systems in Latin America, these reports typically compare curriculums and teachers in Latin America with just a few countries from other regions. We provide a systematic cross-national comparison of these issues by drawing on the new Varieties of Indoctrination (V-Indoc) dataset (Neundorf et.al. 2023), which covers 160 countries from 1945 to 2021. V-Indoc includes measures of the emphasis that primary and secondary schools place on teaching political values, the content of the values taught (e.g., patriotism, democratic norms, etc.), the extent to which schools encourage critical thinking, the type of education degree that is required to become a teacher, the degree of politicization in teacher hiring and firing decisions, and the characteristics of teacher unions. This enables us to provide an unprecedented, rich description of how the education systems of Latin America compare to the rest of the world.

We begin by showing that, from the late nineteenth century to the present, Latin America has done well on indicators of access to primary, secondary, and higher education. But when it comes to students' skills, particularly math and science skills, Latin American students underperform relative to other students, including those from countries with similar GDP per capita. In this respect, Latin America is the embodiment of the "learning crisis" denounced by the World Bank (2017), a phenomenon defined by the fact that high levels of access to schooling often fail to translate into the acquisition of skills.

We then examine three potential political economy explanations for this skills deficit: one, education systems in Latin America emphasize teaching political values more than skills; two, strong teacher unions prevent meritocratic teacher hiring and lead to teachers being poorly qualified; and three, education spending is too low.

[3] Some of the most influential political economy theories of education of the last three decades have been based on assumptions about the patterns of education provision that are factually incorrect. For example, while the argument that democratization was a leading driver of the global expansion of primary schooling relies on the assumption that the median voter lacked access to primary schooling before democracy emerged (Lindert 2004; Acemoglu and Robinson 2006), Paglayan (2021) shows that in three-fourths of countries, this assumption does not hold.

Our results reveal three key insights. First, although Latin America's public primary education systems emerged in the nineteenth century mainly to shape political values, the region today does not stand out relative to other developing regions in the extent to which schools emphasize the teaching of political values. Moreover, the official curriculum of Latin American countries requires primary schools to spend more time on math and science than the curriculums of other regions. This suggests that the region's skills deficit is unlikely to be driven by an exaggerated emphasis on teaching political values. Second, we document that primary school teachers in Latin America have decidedly low education qualifications compared to teachers in other regions. However, we do not find support for the common claim that strong teacher unions contribute to this; if anything, the evidence suggests that stronger teacher unions are associated with higher educational standards to become a teacher. Third, although Latin American countries devote a higher fraction of their GDP to education than other developing regions, we find that the distribution of spending in the region remains regressive, favoring universities over primary and secondary education.

We conclude by suggesting main lines of inquiry for future research on the political economy of education in Latin America and beyond.

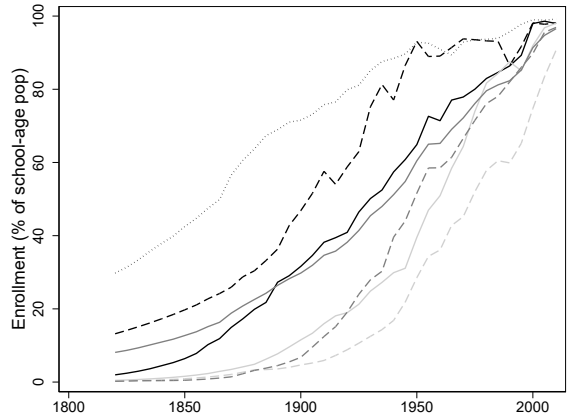
HIGH LEVELS OF ACCESS TO EDUCATION

Latin America has greater access to primary, secondary, and higher education than any other developing region in the world. We reach this conclusion after comparing the enrollment rates of 111 countries from 1820 to 2010 using data assembled by Lee and Lee (2016). Figure 1 shows this comparison, depicting average enrollment rates by region and level of education.[4]

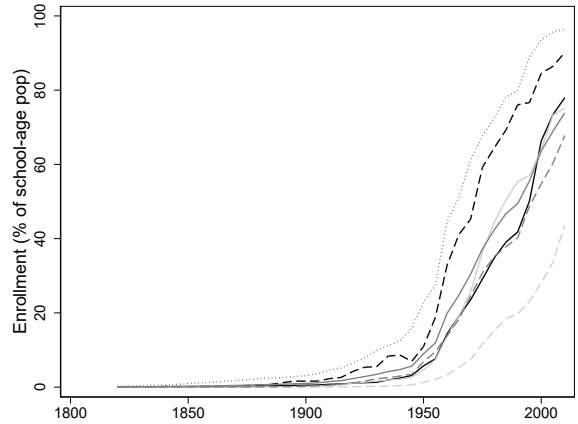
[4] A limitation of Lee and Lee (2016) is that most data before 1900 are extrapolated. However, an analysis by Paglayan (2021) based on more complete and detailed historical data for Europe and the Americas confirms the patterns reported in this section.

Figure 1. Enrollment Rate in Primary, Secondary, and Higher Education by Region, 1820-2010

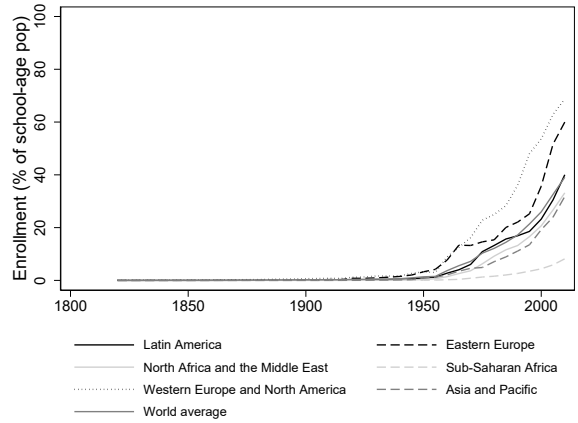
Panel A: Primary School Enrollment Rate



Panel B: Secondary School Enrollment Rate



Panel C: Higher Education Enrollment Rate



Source: Lee and Lee (2016).

As can be seen in panel A of figure 1, Latin America began to expand access to primary education in the late 19th century—much earlier than Asian or African countries—and was the first developing region in the world to accomplish the Millennium Development Goal of universal primary education. By 1900, almost 50 percent of school-age children in Latin America were already enrolled in primary school, compared to only 8 percent in the rest of the developing world.[5] The first efforts to make public primary education broadly accessible emerged not out of democratic ideals or the needs of an industrializing economy; the main goal of mass education was to turn the "savage" and "unruly" children of the lower classes into obedient future citizens who respected the authority of the state (Paglayan 2024). After independence and well before the spread of democracy, national governments concerned about social unrest and political instability invested in mass schooling because they believed that, by instilling a specific set of moral values among the lower classes, schools would help reduce the likelihood of mass rebellion against the status quo and thus consolidate the state's authority (Paglayan 2022). As a result of these mass education efforts made primarily under oligarchic regimes, nearly 70 percent of school-age children were already enrolled in primary schools before Latin American countries first became democratic (Paglayan 2021).

By contrast, access to secondary schools and higher education did not pick up until after World War II. In this respect, Latin America is no different than the rest of the world; even in the most developed countries, secondary and higher education remained a privilege available only to the upper classes. It was only after 1950 that access to these education levels began to expand.[6] European countries, the United States, and Canada saw the fastest rates of expansion in the postwar period; by 2010, they reached enrollment rates above 90 percent in secondary schooling and around 65 percent in higher education. Access to secondary and higher education in Latin America around that time was lower than in developed economies but higher than in any other developing regions—including the wealthier and faster-growing East Asia region—with enrollment rates approaching 80 percent in secondary schooling and 40 percent in higher education in 2010.

A PUZZLING DEFICIT IN MATH AND SCIENCE SKILLS

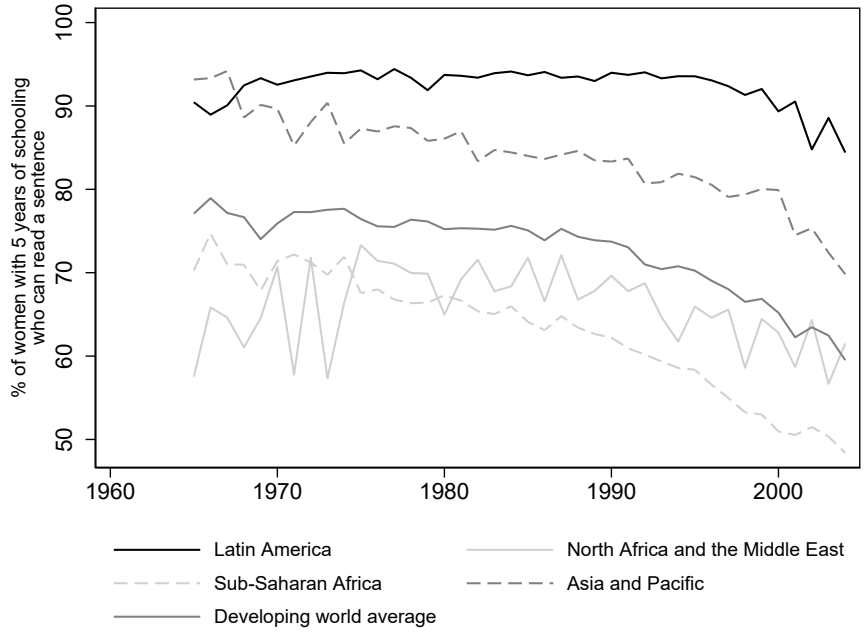
While access to education in Latin America compares favorably to the rest of the developing world both historically and today, the verdict is mixed when it comes to skills. On one hand, Latin America considerably outperforms other developing regions in basic literacy skills. Roughly 40 percent of women in South Asia, North Africa and the Middle East who have completed five years of primary education cannot read a single sentence on their own, and the proportion ascends to 50 percent in Sub-Saharan Africa. By contrast, in Latin America only 10 percent of

[5] See also Lopez in this volume for a discussion of colonial legacies, state capacity, and the centralization of education systems in the region.

[6] See also Kosack in this volume on educational attainment trajectories.

women with five years of schooling cannot read a sentence on their own. This is shown in figure 2, which is based on data compiled by Le Nestour, Moscoviz, and Sandefur (2021).[7] Of course, being able to read a sentence is a very low bar, and the fact that 10 percent of Latin American women with five years of schooling do not meet this bar is alarming, but the situation is even more alarming in other developing regions. Moreover, although there has been a recent deterioration of basic literacy skills in Latin America, this deterioration is part of a global phenomenon and has been less pronounced in Latin America than in other developing regions.

Figure 2. Percentage of Women with 5 Years of Schooling Who Can Read a Sentence by Developing Region, 1965-2004



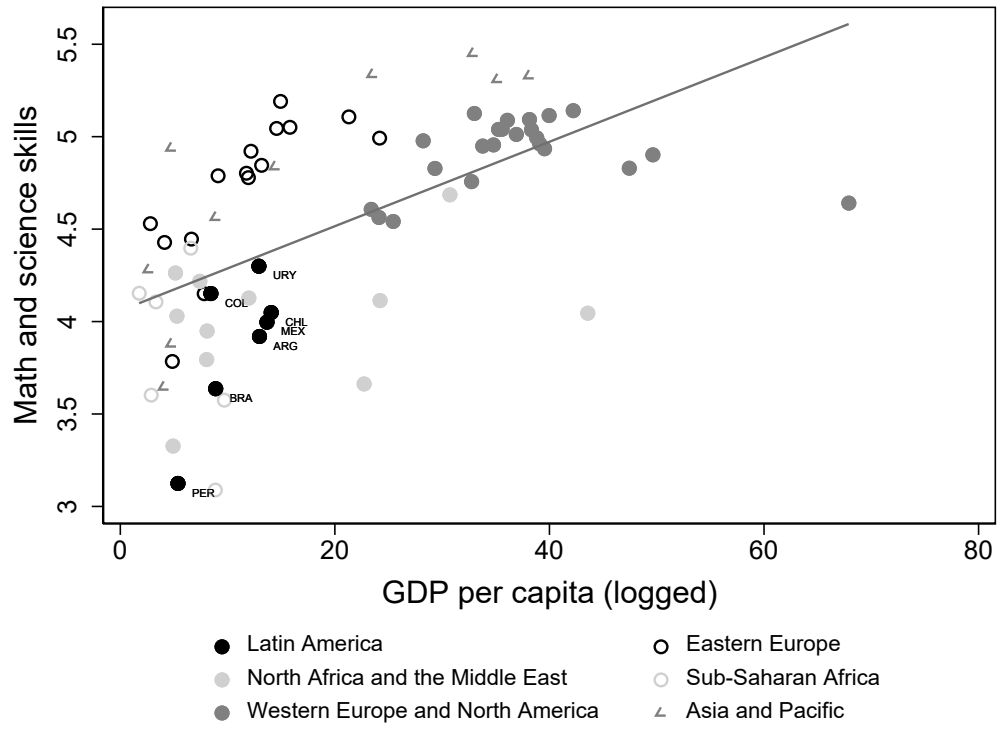
Source: Le Nestour, Moscoviz, and Sandefur (2021).

While indicators of basic literacy compare favorably to other developing regions, Latin American countries tend to perform considerably worse on indicators of math and science skills than we would expect given their level of GDP per capita. Students in Argentina, Chile, and Mexico perform worse in international standardized tests of math and science than students in Finland, Singapore, and the United States, but this is unsurprising; governments and families in Latin American countries have fewer resources to devote to children's cognitive development. What *is* surprising—and concerning—is that, in international tests of math and science skills, Latin American students tend to perform *worse* than we would *for their level of income*. This can be seen

[7] We thank Le Nestour, Moscoviz, and Sandefur (2021) for sharing their dataset. They use the universe of Demographic and Health Survey (DHS) and Multiple Indicator Cluster surveys (MICS) to estimate, for any given cohort, the proportion of women with exactly five years of schooling who can read a sentence.

in figure 3, which shows that a positive relationship exists between GDP per capita (on the x-axis) and math and science skills (on the y-axis); in other words, in countries with higher GDP per capita levels, students tend to perform better in international standardized tests of math and science.[8] Crucially, the diagonal line in this graph shows the linear relationship that exists between these variables globally; countries above that line have better skills than we would expect based on their GDP per capita. But notice that Latin American countries, represented by solid black dots, lie *below* this line, implying that students in Latin America have worse math and science skills than we would expect given their GDP per capita. In particular, it is clear from the graph that Latin American students perform considerably worse in math and science tests than students from Eastern European post-Communist countries, despite having similar income levels.

Figure 3. Cross-Country Relationship between Students' Math and Science Skills and GDP Per Capita, circa 2000



Source: Hanushek and Woessmann (2012); Fariss, Anders, Markowitz, and Barnum (2021).

[8] Country-level measures of students' math and science skills come from Hanushek and Woessmann (2012). The authors harmonized the scores from multiple international standardized tests of student achievement to produce comparable scores for 77 countries. Data on GDP per capita (logged) are from Fariss, Anders, Markowitz, and Barnum (2021). The tests are administered among a nationally representative sample of students who are *enrolled* in school, and therefore provide a comparison of skills across *students*, not the entire population, of different countries.

The remainder of this chapter examines three potential explanations for this puzzling finding. According to these explanations, Latin America's mediocre performance in comparisons of students' math and science skills could be driven by: one, the above-mentioned historical tendency to focus on instilling moral and political values instead of teaching skills; two, the low qualifications of teachers and the characteristics of teacher unions; and three, the pattern of education spending.

EFFORTS TO TEACH POLITICAL VALUES

As discussed earlier, recent research shows that the main goal behind the creation of public primary education systems in the 19th century was not to increase the level of skills of the population but to instill obedience and end the long period of political instability afflicting Latin American countries since independence. Paglayan (2024) documents that, drawing on ideas about the state-building role of education from Prussia and France, and influenced by the experience of civil war and other forms of social unrest that made political elites fearful of social revolution and anarchy, central governments in postcolonial Latin America provided primary education to teach members of the lower class to respect the state and its laws. This emphasis on forming "good citizens,", which elites understood to mean obedient citizens, was present in every aspect of public primary education systems. The training of teachers emphasized their moral training, the curriculum emphasized moral education, and school inspectors were tasked with monitoring whether an atmosphere of discipline reigned in schools. Historically and well into the twentieth century, the goal of promoting skills that could contribute to industrialization and the professionalization of the bureaucracy was left to secondary schools, universities, and technical-vocational institutions known as *Escuelas de Artes y Oficios*. However, access to these institutions was considerably limited; most people only had access to primary education.

Global ideas about the role of education changed considerably after World War II. The development of human capital theory in the 1960s, the rising influence of economics within the World Bank and UNESCO around the same time, and competition for economic supremacy during the Cold War, all contributed to the development of the modern view that education plays a key role in promoting skills and economic growth (Paglayan 2021). Was this reconceptualization concerning the role of education accompanied by a reduction in Latin America's reliance on schools as a policy tool to teach political values? Or did the region's education systems continue to be heavily influenced by their historical purpose? And can the region's skills deficit be explained by an outsized effort to teach values instead of skills?

To answer these questions, we rely on the Varieties of Indoctrination (V-Indoc) dataset, a cross-national dataset containing expert-coded measures of the content of the curriculum and the characteristics of teachers and unions in 160 countries from 1945 to 2021 (Neundorf et.al. 2023). In this section, we focus on the politicization of the curriculum as measured by four variables. The first is an index of education systems' effort to teach political values, which captures whether primary and/or secondary schools have a mandatory subject focused on teaching political values

and the extent to which the history curriculum seeks to inculcate a specific set of political values.[9] The second variable is an index of the effort made by education systems to instill patriotism, based on whether language lessons use textbooks or other pedagogical materials that promote patriotic sentiment and the extent to which schools display and celebrate patriotic symbols. The third variable captures the degree to which history lessons promote a specific societal model or political ideology, such as communism, fascism, or adherence to democratic norms and institutions. Finally, the fourth variable captures the extent to which students are encouraged to develop critical thinking skills in history lessons. The regional averages for these variables are shown in figures 4 and 5, with Latin America depicted by the solid black line and the world average by the solid grey line.

We find that, today, education systems in Latin America make a *slightly* greater effort to teach political values than education systems in the rest of the world—a first piece of evidence that suggests that the emphasis placed on teaching values is unlikely to help us understand why the region fares poorly in skills comparisons. Let us start by examining panel A of figure 4. The figure illustrates that, while in the mid-twentieth century Latin American countries put considerably more effort into teaching political values than countries in other parts of the world, today the gap has narrowed significantly. For example, when we compare the efforts made by education systems to teach political values in secondary schools, we find that Latin America today looks similar to the rest of the world, with 80 percent of countries in both Latin America and around the world mandating instruction in political values. Moreover, the history curriculum is slightly less, not more, likely to promote a specific ideology in Latin America than in other regions. However, in Latin America, the emphasis on teaching political values begins earlier in a student's life: 75 percent of Latin American countries have a mandatory subject focused on teaching political values at the primary education level compared to 68 percent of countries globally.

Similarly, we find that education systems in Latin America do not stand out for their efforts to instill patriotic values. This is shown in panel B of figure 4, which depicts regional trends for the V-Indoc index of patriotic content in education, with higher values indicating more effort to instill patriotism in schools. When we decompose this index we find that, on one hand, patriotic symbols are more often displayed and celebrated in schools in Latin America than in the world as a whole. In 87 percent of countries in Latin America, compared to 77 percent of countries in the rest of the world, schools explicitly draw students' attention to patriotic symbols or regularly remind students about the symbols through activities such as flag raising, school ceremonies, reciting a pledge of allegiance, or broadcasting or singing the national anthem. On the other hand, patriotic values are less likely to form part of language lessons in Latin America than in other regions. The V-Indoc team asked experts whether, when teaching the official language(s) of the

[9] To construct the index of effort to teach political values, V-Indoc asked education experts in each country "How often does the history curriculum promote a specific societal model or ideology?" and "Are students in primary / secondary school required to study at least one subject that predominantly focuses on teaching political values?" For the latter question, experts were explicitly instructed *not* to count history lessons, but were told to count standalone subjects focused on political education as well as subjects where the teaching of political values is integrated into the curriculum of moral, religious, or civic education courses.

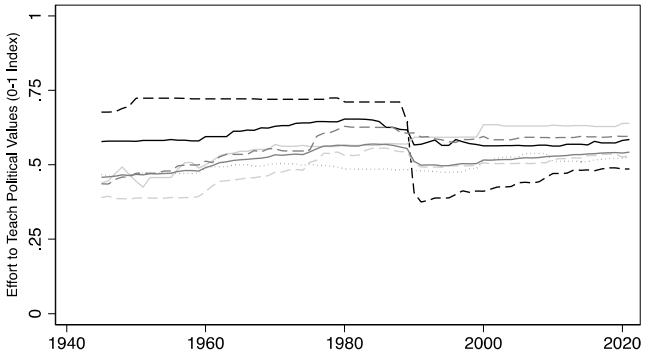
country, schools use texts or exercises that encourage feelings of love, pride, loyalty, and commitment to one's country. This could be done, for example, by using texts that celebrate the country's past military accomplishments when teaching students how to read, choosing words that evoke patriotic sentiment when teaching vocabulary or calligraphy, etc. The data suggest that patriotic content enters language lessons in 50 percent of Latin American countries, compared to 65 percent of countries in the rest of the world. In other words, some aspects of schooling in Latin America emphasize patriotism more, while other aspects emphasize it less, than in other regions.

What *does* stand out about Latin America compared to other regions is how similar the region's emphasis on teaching political values was in 2021 compared to 1945. For example, while the prevalence of a mandatory subject focused on teaching political values in primary schools increased in Asia, Sub-Saharan Africa, and North Africa and the Middle East and declined in post-Communist countries from 1945 to 2021, Latin America today looks remarkably similar to 1945. Likewise, when comparing the evolution of the index of patriotic education shown in panel B, we can see that between 1945 and 2021, the index declined by 0.12 points in Latin America, a much smaller decline than that seen in Eastern Europe (-0.29 points) and Western Europe and North America (-0.54). The magnitude of the change in Latin America is also considerably smaller than that observed (in the opposite direction) in Asia (+0.24 points), Sub-Saharan Africa (+0.57), and North Africa and the Middle East (+0.57). In sum, while the teaching of political values increased in the rest of the developing world and declined in developed countries in the last seven decades, it hardly changed in Latin America in 2021 relative to 1945.

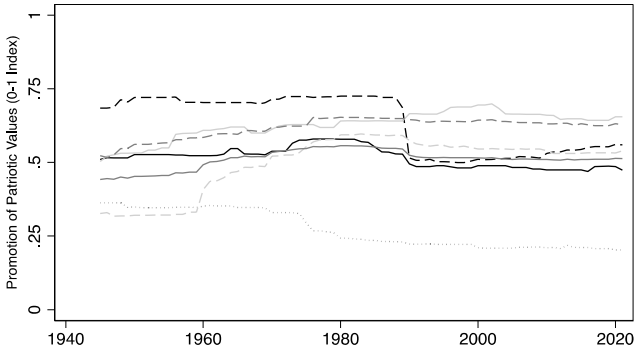
The similarity between 1945 and 2021 does not imply that there was no change at all in Latin America over this period. Many indicators of the politicization of education experienced a marked deterioration during the period of military dictatorships in the 1960s and 1970s. Students in both primary and secondary schools were more likely to have a required course focused on teaching political values during these decades, and history lessons under these regimes were more likely to impart a particular political ideology. The reorientation of education during military dictatorships was such that by the 1970s, history lessons in Latin American countries focused on teaching a specific political ideology as often as the dictatorial regimes of Asia and the Middle East. This is shown in panel C of figure 4. Moreover, during the 1970s, the region even surpassed the totalitarian regimes of the Soviet Union in the extent to which students were required to take a course focused on teaching political values.

Figure 4. Schools' Emphasis on Political Values by Region, 1945-2021

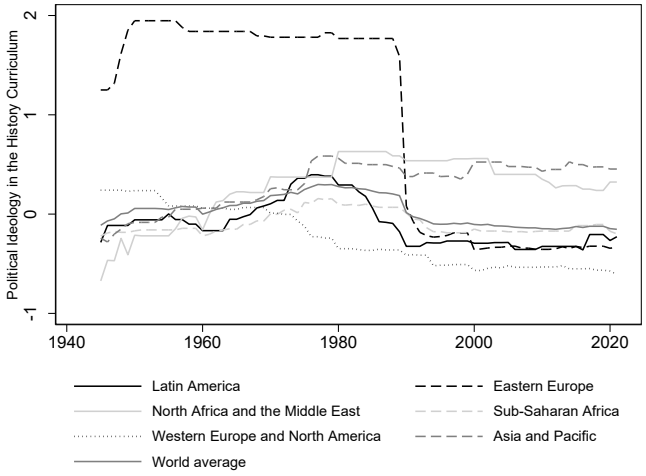
Panel A: Effort to Teach Political Values (0-1 Index)



Panel B: Promotion of Patriotic Values (0-1 Index)



Panel C: Extent to which History Curriculum Promotes a Specific Societal Model or Political Ideology

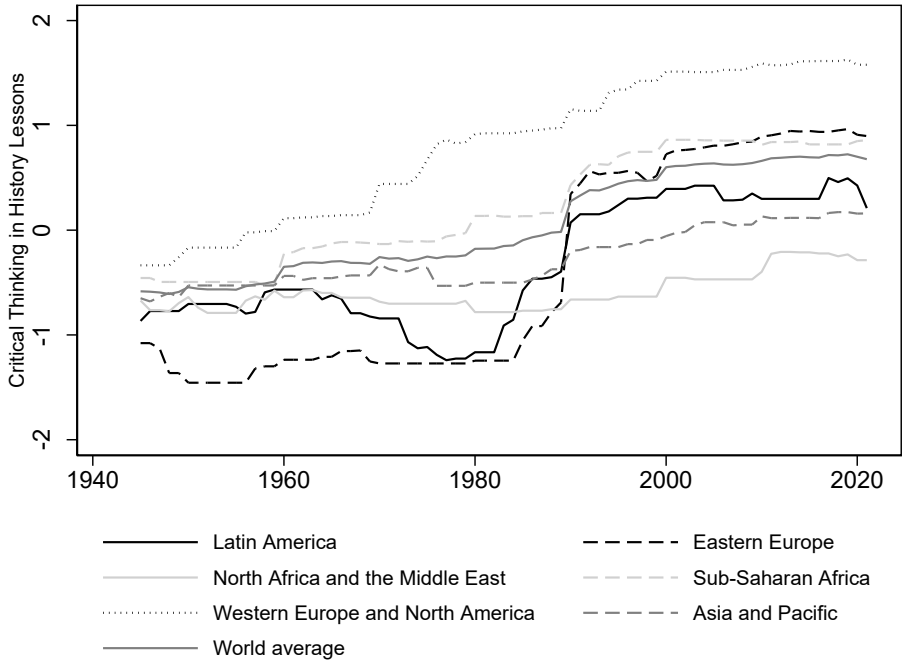


Note: See main text for an explanation of the indices and variables displayed here.
Source: Neundorf et.al. (2023).

What is remarkable about Latin America's trajectory is that, for many indicators of the politicization of education, the arrival of democracy in the 1980s and 1990s was followed by a reversal back to the levels of politicization that existed in the 1950s. This is puzzling because there was little democracy in Latin America in the 1950s—certainly much less than in the 1990s. The fact that the recent wave of democratization was not accompanied by further reductions in the politicization of education beyond what was already the norm in the 1950s suggests the persistence of non-democratic roots in Latin American education institutions.

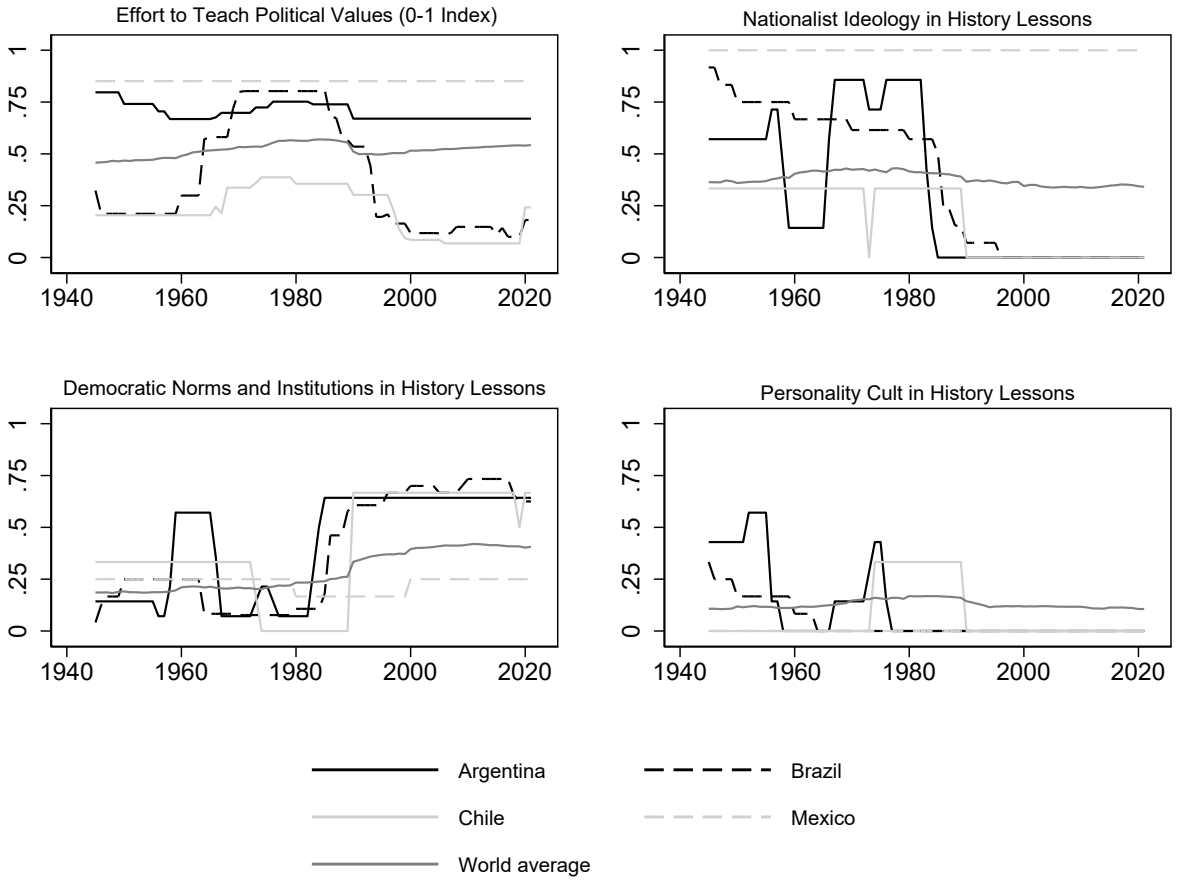
An exception to the pattern of stability observed in the region concerns the methods used to teach history and, in particular, "the degree to which students are *de facto* given the opportunity to engage in debates which question the material and content of their history classes, as well as being able to voice disagreement with each other." Experts' responses to this V-Indoc question are summarized in figure 5. Relative to its own history, Latin America today allows much more critical engagement with history lessons than in the 1950s, and certainly a lot more than in the 1960s and 1970s. Still, other regions have made even greater improvements in this domain. As a result, when comparing the degree to which critical thinking is encouraged or at least allowed when teaching history, Latin America today does considerably worse than the rest of the world. We will return to whether this explains the region's underperformance in math and science skills, but to preview our results, we do not find strong evidence that it does.

Figure 5. Critical Thinking in History Lessons by Region, 1945-2021



Source: Neundorf et.al. (2023).

Figure 6. Schools' Effort to Teach Political Values, and Content of Political Education, in Argentina, Brazil, Chile, and Mexico, 1945-2021



Source: Neundorf et.al. (2023).

These regional patterns notwithstanding, there are also meaningful differences between countries. For example, both today and in 1945, Argentina and Mexico score relatively high on the index that measures education systems' effort to teach political values, whereas Brazil and Chile score relatively low on this index (see figure 6). Further, while in each country the extent of education politicization in 2021 is very similar to 1945, the trajectories differ. Brazil and Chile, and to a lesser extent Argentina, experienced a temporary increase in education politicization during the dictatorships of the 1960s and/or 1970s, followed by a decline after the transition to democracy. Such changes are not observed in Mexico, where the level of politicization in education systems today remains as high as it was throughout the PRI regime (1929-2000). Moreover, the specific *content* of indoctrination also differs across countries. For example, in Argentina during Perón's government (1946-1955) and in Chile under Pinochet (1973-1990), history lessons placed considerable emphasis on cultivating a personality cult. By contrast, the

military dictatorships of Argentina (1976-1983) and Brazil (1964-1985) placed relatively more emphasis on cultivating conservative and nationalist ideologies. In all three countries, these ideologies have been replaced in recent decades by an effort to instill adherence to democratic norms and institutions (e.g., the norm that all citizens must vote). In the Mexican case, there is relatively little emphasis on teaching democratic norms and institutions, but nationalism continues to be a core ideology taught in schools.

LIMITED EVIDENCE OF A TRADE-OFF BETWEEN SKILLS AND VALUES

An important political economy question is whether policymakers face a trade-off between teaching skills and promoting political values. The theoretical answer to this is not obvious. On one hand, if we believe that any given hour of schooling can either be used to teach skills *or* values, the fact that school time is limited would imply a mechanical trade-off between how much time can be devoted to each of them. However, it is also possible that skills and values are complementary, or at least compatible. For example, it may be that well-behaved students who follow school rules are able to learn more math and science in part *because of* their better discipline. Alternatively, schools may teach skills and values *simultaneously*, such as when math exercises instruct primary school students to count the number of national flags or the number of soldiers. While understanding whether countries face a trade-off between teaching skills and values requires a more extensive empirical analysis than what we can offer here, we present exploratory empirical patterns that, we hope, will encourage future research on this relationship.

We begin by considering the content of the curriculum circa 2000, specifically the number of hours dedicated to teaching math and science according to official curriculums. Does Latin America underperform in these subjects because the curriculum does not allocate sufficient time to them? Our analysis, based on data from Benavot (2004), does not support this hypothesis. In fact, and perhaps surprisingly, Latin America stands out as the region that devotes the greatest number of hours to teaching math and science in official primary school curriculums. According to Benavot's (2004) dataset, schools in Latin America are required to devote on average 242 hours per year to these subjects from grades 1 to 6, compared to 199 hours in advanced economies and 150 hours in Eastern Europe and Central Asia. This is not driven by a greater number of total hours of instruction across all subjects, but rather by a greater proportion of school time devoted to math and science. While other regions devote between 22 and 26 percent of school time to these subjects, primary schools in Latin America are expected to devote on average 31 percent of school time to them. The comparison with Eastern Europe and Central Asia is particularly relevant because, as noted earlier, these countries perform considerably better than Latin America in international math and science tests despite similar levels of per capita GDP.

Further, primary schools in Latin America are also expected to devote more time to social studies than schools in other regions. Social studies typically encompass lessons about geography and history, and is one of the subjects commonly used to inculcate political values and ideologies. On average, school curricula in Latin America require countries to devote about 13 percent of instructional time to social studies between grades 1 and 6, compared to 9 percent in advanced

economies and 8 percent in post-Communist countries. How does Latin America manage to teach both more math and science *and* more social studies than other regions, while keeping total instructional time comparable? The analysis of official curricula shows that the region's education systems leave little room for elective subjects. For example, while electives represent 12 percent of the primary school curriculum in Eastern European and Central Asian countries, in Latin America they account on average for only 3 percent of the curriculum. The close regimentation of school time is another feature that reflects the persistence of an authoritarian ethos in the character of education systems in the region.

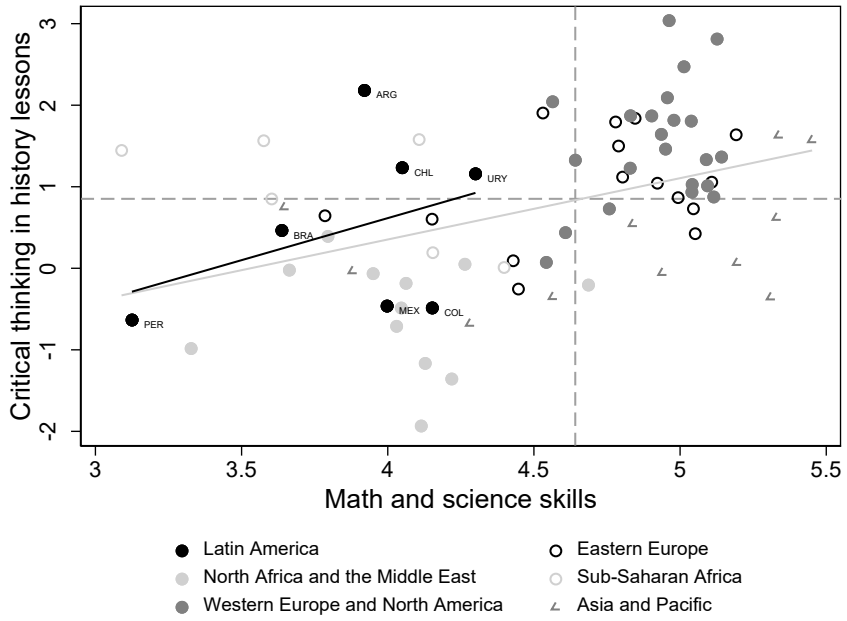
The preceding analysis suggests that the relatively poor math and science skills of Latin American students are unlikely to be driven by a greater emphasis on teaching political values or by insufficient time allocated in the curriculum to math and science. To get more directly at the question of whether a trade-off exists between values and skills, in figure 7 we examine the relationship that exists between math and science skills and two measures of the politicization of education discussed above: the emphasis placed on teaching patriotism and the opportunities for critical thinking in history lessons.

Beginning with the relationship between math and science skills and critical thinking in history lessons, panel A of figure 7 shows that these two variables are positively correlated around the world (the light grey line) and within Latin America (the black line): countries where students have more opportunities for critical discussion of history also do better in math and science skills. This would suggest that indoctrination—which some would define as the opposite of critical thinking—and math and science skills are inversely related. However, the relationship shown in Panel B between math and science skills and efforts to instill patriotism in schools (another form of indoctrination) suggests the need for caution around this conclusion. Cross-nationally, these two variables are negatively correlated (the light grey line). However, this negative correlation is driven by the clustering of North African and Middle Eastern countries in the upper left quadrant (below-median skills, above-median patriotism) and the clustering of Western European and North American countries in the bottom right quadrant (above-median skills, below-median patriotism). If we look *within* regions, the correlation between these variables is weaker. Within Latin America, for example, the level of math and science skills varies considerably across countries even though education systems in the region promote patriotic values to a similar extent.[10] In other words, for a given level of effort to instill patriotism through the education system, it is possible to accomplish many different skills levels. In fact, the same graph shows that many Eastern European countries have higher math and science skills despite schools there making similar effort to teach patriotism as schools in Latin America. Overall, then, we do not find compelling evidence of a trade-off between skills and values.

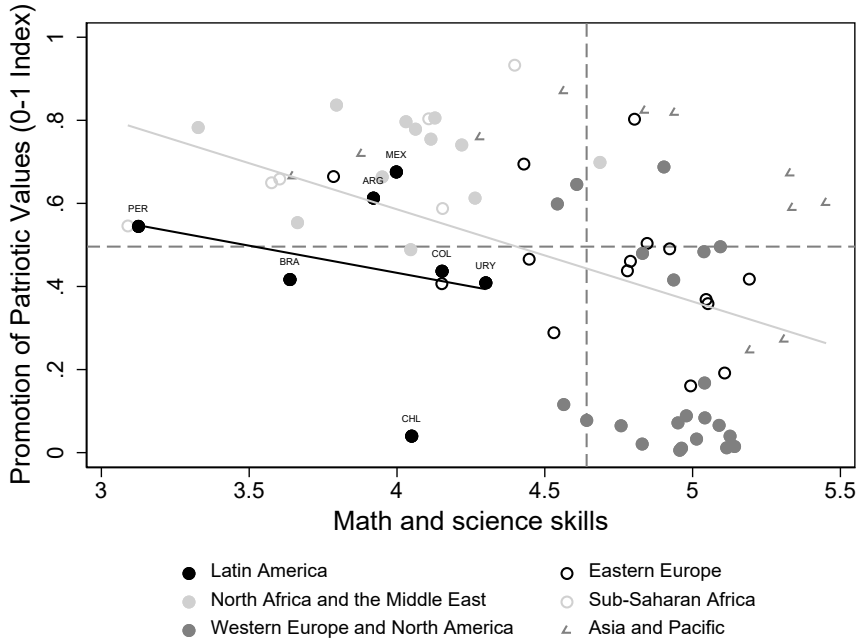
[10] The exception is Chile, where patriotic education is considerably lower.

Figure 7. Cross-National Relationship between Students' Math and Science Skills and Schools' Emphasis on Political Values, circa 2000

Panel A: Math and Science Skills and Critical Thinking in History Lessons



Panel B: Math and Science Skills and Efforts to Instill Patriotism



Source: Hanushek and Woessmann (2012); Neundorf et.al. (2023).

If the emphasis that schools place on teaching political values does not tell us much about why Latin American countries do relatively poorly in international comparisons of students' cognitive skills, what else might explain the region's underperformance? In the remainder of this chapter, we point to two factors known to shape students' skills: the characteristics of teachers and the level and distribution of education expenditures.

TEACHERS ARE POORLY QUALIFIED, BUT NOT BECAUSE OF TEACHER UNIONS

"The quality of an education system cannot exceed the quality of its teachers" is a popular phrase among international education experts. It originated in a 2007 McKinsey report that argued that the most important determinant of performance in international standardized tests of student achievement is the quality of teaching, which according to the report is highest in those countries where entry into the teaching profession is highly selective and meritocratic (Barber and Mourshed 2007). The phrase resonated with education experts' intuitions and triggered numerous efforts to document the content of policies designed to recruit, train, compensate, monitor, and support teachers across countries and regions (Vegas et.al. 2012). The World Bank and other international organizations adopted this catchy phrase as they advocated for reforms of the teaching profession in developing countries—although their advocacy focused more on promoting pay-for-performance schemes tying teachers' salaries to student test scores than on promoting more selective entry into teaching.

Previous studies of the teaching profession in Latin America have argued that the region exhibits three main characteristics. First, becoming a teacher is relatively easy; selectivity of entry into teaching is low, and even those who lack the knowledge and skills needed to become effective teachers can still obtain a teaching job (Bruns and Luque 2014; Elacqua et.al. 2018). Second, teaching jobs often constitute a source of patronage and, as such, are awarded based on political considerations rather than the individual merits of the candidate (Bruns, Macdonald and Schneider 2019). Third, teacher unions in the region are strong and use their power to block policy reforms that have the potential to improve the quality of education (Fernández 2012; Bruns and Luque 2014; Chambers-Ju and Finger 2016; Bruns, Macdonald and Schneider 2019).

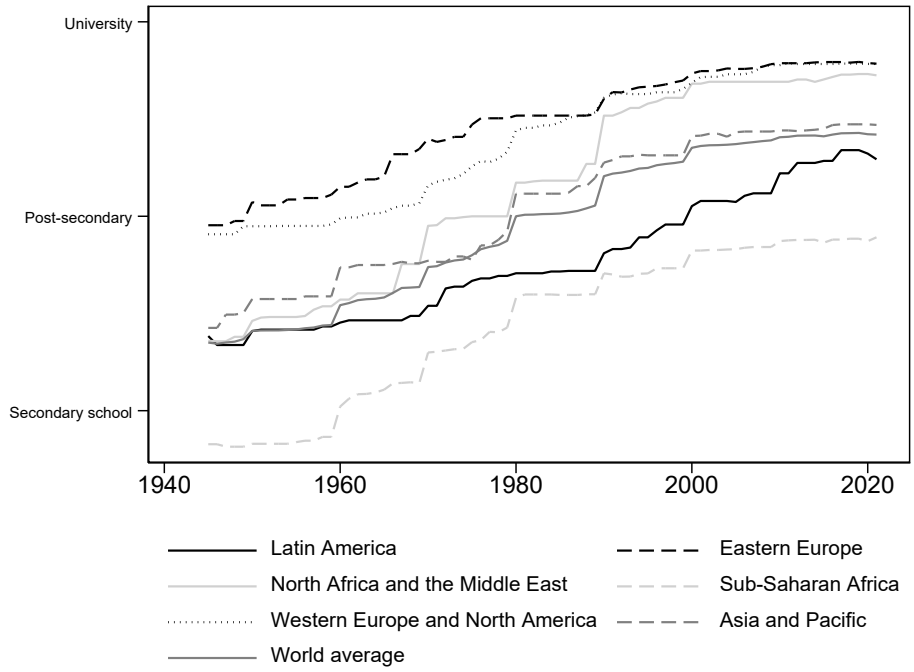
The main limitation of these characterizations of the teaching profession is that they stem from isolated cases and/or ad hoc comparisons between Latin America and a few select countries from other regions. For example, studies by the World Bank (Bruns and Luque 2014) and the Inter-American Development Bank (Elacqua et.al. 2018) that highlight the low selectivity of entry into teaching come to this conclusion by comparing teacher policies in Latin America with a small set of high-performing education systems such as Finland, Singapore, and South Korea. Likewise, arguments about the prevalence of patronage in teacher hiring decisions often point to the case of Mexico: during the PRI regime, teaching jobs were distributed by the national teacher union (SNTE) to loyal supporters of the regime, and there is a general perception that, to this day, the union plays an important role in allocating teaching positions to reward political supporters

(Murillo 1999; Chambers-Ju and Finger 2016). However, we do not know the extent to which Mexico's experience is representative of teacher hiring practices in the rest of the region.

To shed light on how the characteristics of teachers in Latin America compare to the rest of the world, we conduct a cross-national comparison of the educational requirements to become a teacher, the politicization of teacher hiring and firing decisions, and the characteristics of teacher unions. To do so, we draw again on four variables from the V-Indoc dataset. The first variable is the level of education required *de facto* to become a primary school teacher. This is considered to be a measure of the selectivity of entry into teaching: all else equal, requiring a university degree to become a teacher makes teaching a more selective profession than requiring only a secondary school degree or a post-secondary non-university degree. The second and third variables measure the prevalence of patronage in teacher hiring and firing; they are based on experts' responses to the question "To what extent are hiring decisions for teachers based on their political views and/or political behavior and/or moral character?" and a similar question about teacher firing decisions. High values on these variables indicate high levels of politicization in hiring and firing decisions. The fourth variable is based on experts' responses to the question "Are officially recognized teacher unions independent from political authorities?" We view a union's political independence as an admittedly imperfect yet useful proxy for union strength because such independence is a necessary condition for unions to pressure governments to adopt the union's preferred policies; by contrast, unions that have been politically coopted are likely to act as a branch of the government or a particular political party as opposed to pushing for their own preferred policies. Higher values on this variable indicate that unions are *less* independent from the government (i.e., more subject to control by political authorities). The regional averages for these four variables are depicted in figures 8 to 10.

Our analysis reveals that the level of education required to become a primary school teacher in Latin America is astoundingly low, not just compared to developed countries like Finland or Singapore, but also relative to other developing regions. While many countries around the world require teachers to have a university degree, most Latin American countries continue to require post-secondary non-university degrees. In fact, the only region with lower educational requirements than Latin America today is Sub-Saharan Africa. What is astounding about this finding is that Latin America has lower educational requirements for aspiring teachers than regions such as North Africa and the Middle East despite the fact that, in the latter, the overall level of access to university is lower. Put differently, teachers in Latin America have low education qualifications and this cannot be explained by the limited supply of highly educated individuals in the overall population. Moreover, teachers' educational qualifications in Latin America have fallen behind relative to the rest of the world because, while requirements have increased everywhere since 1945, they have increased more elsewhere. These findings are shown in figure 8.

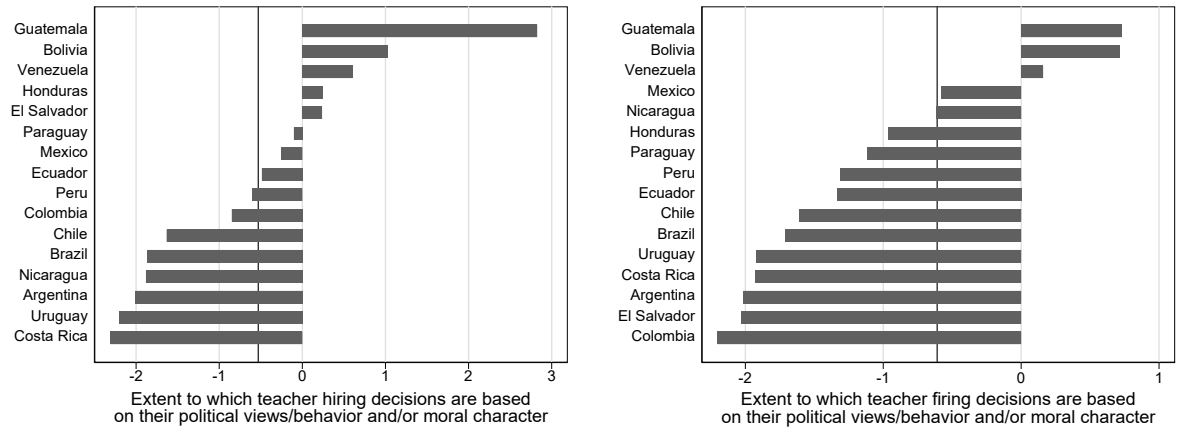
Figure 8. Education Degree Required de facto *to Become a Primary School Teacher by Region, 1945-2021*



Source: Neundorf et.al. (2023).

Contrary to what the case of Mexico might suggest, our second key finding on teachers is that, teacher hiring and, especially, teacher firing decisions in Latin America, while more politicized than in developed countries, are still less politicized than in the rest of the developing world. Overall, Mexico, Guatemala, Bolivia, and Venezuela stand out as the only four countries in the region where the level of politicization in both teacher hiring and firing decisions is greater than the world average (indicated by the black vertical line in figure 9). However, in Argentina, Brazil, Chile, Colombia, Costa Rica, Peru, and Uruguay, which together account for 61 percent of Latin America's population, the level of politicization in both hiring and firing is lower than the world average. Overall, the region's average level of politicization is similar to the world average in teacher hiring and considerably lower in teacher firing. The level of politicization relative to the rest of the world has also remained relatively stable over time.

Figure 9. Politicization of Teacher Hiring and Firing in Latin America Relative to the World Average, 2010-2021

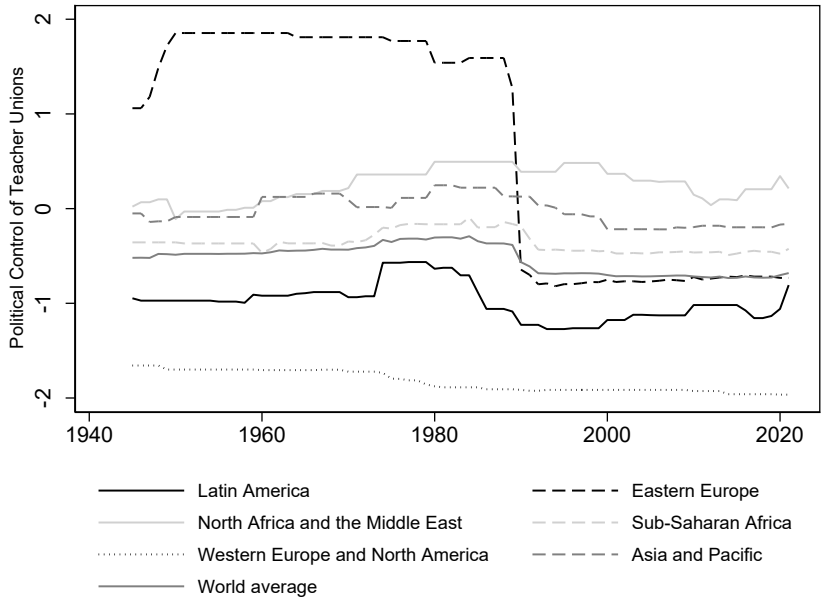


Note: The vertical black line represents the world average.
Source: Neundorf et.al. (2023).

What about teacher unions? We find that teacher unions in Latin America are considerably more independent from political authorities—or less subject to political capture or control—than unions in other developing regions. This is shown in figure 10 and is consistent with the common claim that unions in Latin America are well-organized and have considerable impact on education reform (Grindle 2004). Could this explain why Latin America has low educational requirements to become a teacher? Our exploratory analysis does not support this hypothesis. In developed countries—where the requirements to become a teacher are considerably higher than in Latin America—teacher unions tend to be more independent than in Latin America. More generally, both around the world and within Latin America specifically, countries with more independent teacher unions tend to have *higher*, not lower, educational standards to become a teacher. In a regression of teachers' educational qualifications on unions' political independence, the coefficient on unions' political independence is -0.27 and statistically significant at the 1 percent level. Because higher values of the union independence variable indicate that teacher unions are less independent from (more controlled by) political authorities, the negative coefficient implies that countries with more independent teacher unions tend to have higher educational requirements to become a primary school teacher. The coefficient on unions remains unchanged if we add region fixed effects to account for permanent features of each region, and remains negative but loses statistical significance when region and year fixed effects or country and year fixed effects are included. If we limit the regression analysis to Latin American countries only, the coefficient on teacher unions' political independence is also negative (-0.12) and statistically significant at the 1 percent level. In other words, within Latin America, those countries with more independent teacher unions tend to have higher, not lower, educational requirements to become a primary school teacher. In sum, we do not find evidence for the

common claim that strong teacher unions are responsible for keeping entry into teaching non-selective. If anything, our analysis suggests the opposite.

Figure 10. Political Control of Teacher Unions by Region, 1945-2021



Note: Higher values indicate that teacher unions are less independent from (more controlled by) political authorities.
Source: Neundorf et.al. (2023).

To be sure, our exploratory analysis is not sufficient to claim that more independent unions *lead* to more qualified teachers. Still, the correlations we identify run in the opposite direction of what we should see if stronger unions resulted in lower education requirements for teachers. The comparative perspective we provide suggests that in order to understand why Latin American countries set low barriers for entry into teaching, we need to consider other explanations. One plausible explanation is that governments that use teaching jobs as a source of patronage prefer to keep the educational requirements to become a teacher low in order to keep teacher salaries low and, therefore, ensure that patronage remains relatively cheap (Calvo and Murillo 2004). Unions captured by the government may either be unable to challenge this policy or may be kept dependent and aligned to the government's priorities by receiving some of the rents from patronage (Murillo 1999; Larreguy, Montiel, and Querubin 2017). By contrast, an independent union may have both the interest and the ability to pressure the government to raise the standards for becoming a teacher to boost the prestige of the teaching profession or even to raise the quality of education (Paglayan 2014; Coyoli 2024). Future research should consider this and other possible explanations for the puzzling patterns we document here (see Chambers-Ju & Sullivan in this volume).

LOW AND REGRESSIVE EDUCATION EXPENDITURES

Until recently, the consensus among education policy scholars was that if some education systems underperform in comparisons of students' skills, it is not because they spend insufficiently, but rather inefficiently. However, a recent wave of econometric studies improve upon the methodological limitations of these studies and show that increasing the level of education expenditures does lead to improvements in students' skills (e.g., Lafortune et.al. 2018; Jackson and Mackevicius 2021). While these recent studies focus primarily on the United States, they have also reshaped how international education experts think about the role of education expenditures. The new consensus is that the relationship between expenditures and skills is not linear: beyond a certain threshold of education expenditures, further increases in spending no longer improve student learning, but because education expenditures in most developing countries lie well below this threshold, devoting more resources to education *would* make a difference in those countries.

While there is no agreed-upon threshold of spending below which further increases are likely to yield improvements in student learning, all Latin American countries lie considerably below whichever estimate of this threshold we rely on. For example, the OECD (2012) estimates that the threshold is roughly $35,000 of cumulative (primary plus secondary) per-pupil spending.[11] In 2016, cumulative per-pupil spending in Latin America was just one-seventh of this amount ($5,014 on average), ranging from $1,320 in the country that spent the least (Guatemala) to $9,093 in the country that spent the most (Costa Rica).[12] Likewise, Vegas and Coffin (2015) estimate that the threshold of spending is roughly $8,000 per secondary school student. In 2016, average per-pupil expenditure in secondary education in Latin America was just $2,560, ranging from $417 in Guatemala to $5,007 in Argentina.[13]

How do these spending levels compare to other regions? It should come as no surprise that Latin American countries spend considerably less on education than the wealthy countries of Western Europe and North America, where cumulative (primary plus secondary) per-pupil spending is $20,675 on average,[14] and considerably more than the low-income countries of Sub-Saharan Africa, where average cumulative spending is roughly $1,215 per student.[15] Yet comparing per-pupil education expenditures in Latin America with expenditures in notably wealthier or notably poorer regions is not really informative. A more relevant question is how education expenditures

[11] We compute cumulative spending as the sum of per-pupil primary education expenditure plus per-pupil secondary education expenditure.

[12] The $5,014 figure was computed by adding up average per-pupil primary education expenditure ($2,454) plus average per-pupil secondary education expenditure ($2,560).

[13] The 2016 are based on World Bank data for 13 Latin American countries.

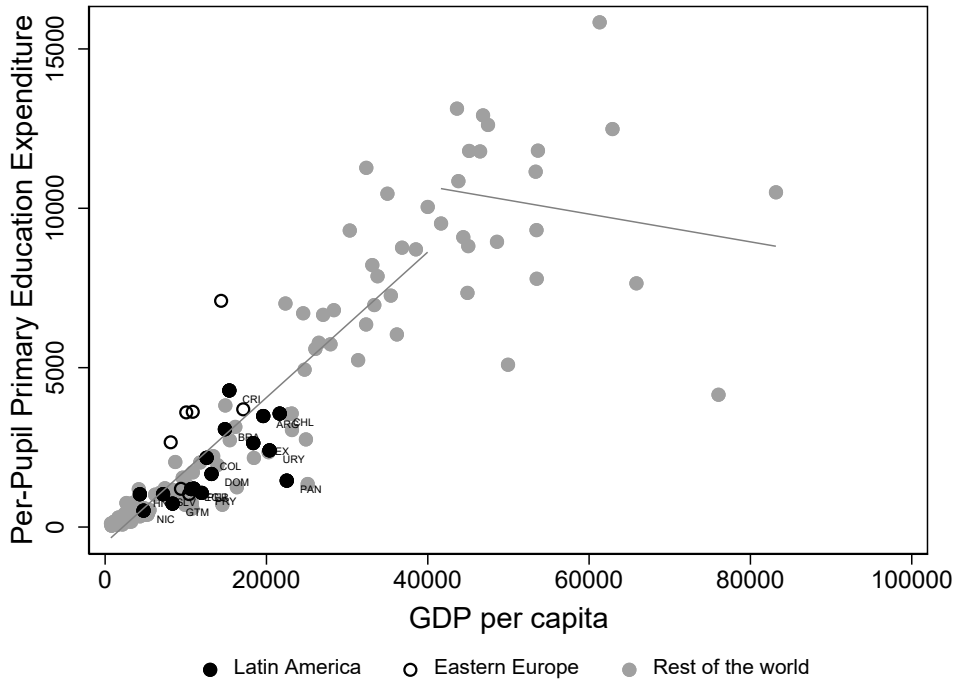
[14] The average for Western Europe and North America is based on World Bank data on per-pupil primary and per-pupil secondary education for 25 countries in 2010. The average for 2016, based on 20 countries with data, is $18,377.

[15] The average for Sub-Saharan Africa is based on World Bank data on per-pupil primary and per-pupil secondary education for 17 countries in 2010. The average for 2016, based on 11 countries with data, is $2,189.

in Latin America compare to expenditures in countries outside the region that have similar levels of GDP per capita.

Our analysis reveals that Latin American countries devote considerably fewer resources to basic education than similarly wealthy countries from other regions. This is true for both primary and secondary per-pupil expenditures, but it is especially true for primary education. We show this in figure 11, which depicts the relationship between GDP per capita (on the x-axis) and per-pupil primary education expenditures (on the y-axis) around 2016. The two straight lines on the graph show that the relationship between these variables is non-linear; among countries with GDP per capita below $40,000 (which includes all Latin American countries), wealthier countries spend more on primary education than poorer countries, but this positive relationship disappears among countries with GDP per capita above $40,000. Notably, almost all Latin American countries (represented by solid black dots) lie below the diagonal straight line, which implies that they spend less on primary education than what we would expect based on their overall income level. The comparison with Eastern European countries (represented by hollow dots) is particularly striking, as these countries spend much more per primary school student than Latin American countries despite having similar levels of GDP per capita.

Figure 11. Cross-Country Relationship between Per-Pupil Primary Education Expenditures and GDP Per Capita, circa 2016



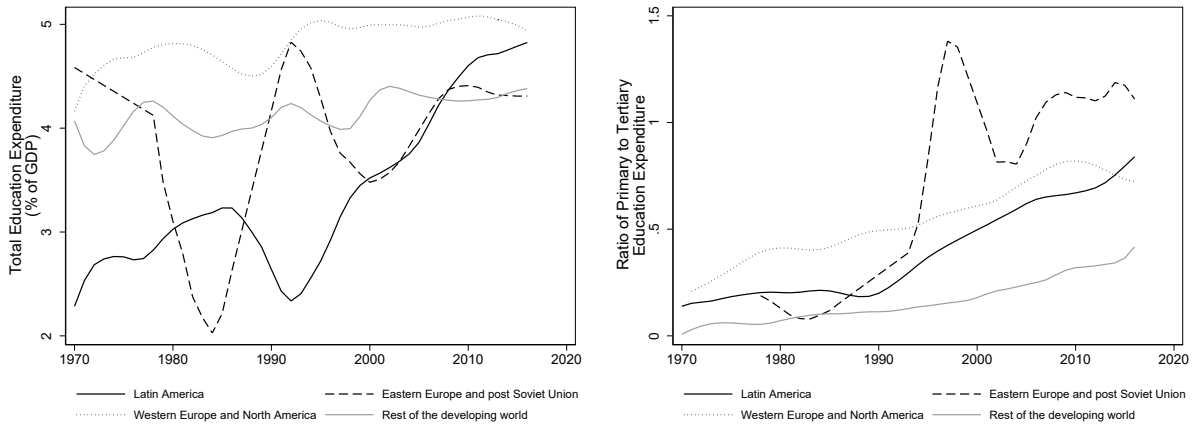
Note: Per-pupil education expenditures are expressed in PPP constant US$ and GDP per capita in PPP current international US$. For each country, the graph shows average values for these variables from 2010 to 2016.
Source: World Bank.

The higher levels of primary education spending observed in Eastern European countries are driven not by these countries devoting a higher fraction of their GDP to the education budget, but by Latin American countries having a more regressive education budget that prioritizes spending in universities over primary and secondary education. In fact, in 2016, Latin American countries devoted on average 4.8 percent of their GDP to education, whereas Eastern European ones devoted an average 4.3 percent. But while the average Latin American country devoted $4,062 of the education budget to each university student, the average Eastern European country spent 33 percent less than this per university student.

A long-term perspective on education spending in Latin America shows that its regressive distribution is a legacy of the period of military dictatorships, and that budgets have become increasingly progressive since the 1990s.[16] This is shown in figure 12, which displays total education expenditure (across all levels) as a percentage of GDP on the left, and the ratio of per-pupil primary to tertiary education expenditure on the right. A lower ratio indicates a more regressive budget, as more funds are allocated to universities, which are less accessible to low-income individuals. A key takeaway from figure 12 is that, during the 1970s and 1980s, Latin American governments spent only 18 percent on each primary school student compared to each university student. Unlike other regions that moved towards more progressive spending, in Latin America the ratio of per-pupil primary to tertiary education expenditure remained unchanged. However, since the 1990s, both total education expenditure as a fraction of GDP and the progressiveness of the education budget have increased. Despite this, Latin America still spends less per primary school student than per university student, and allocates a lower share of its total education budget to primary and secondary schools than other developing regions (see also Kosack in this volume). Compare these trends to Eastern European countries, which after the fall of the Soviet Union shifted their spending so much so that, today, they spend more per primary student than per university student. This difference in the composition of education spending across regions, despite similar GDP per capita, raises questions about the potential for more progressive education expenditures to improve skills in Latin America.

[16] The regressivity of education spending during the period of military dictatorships is consistent with Stasavage (2005) and Ansell (2010).

Figure 12. Education Expenditures in Latin America Compared to Other Regions, 1970-2018



Source: World Bank.

IMPLICATIONS FOR POLITICAL ECONOMY THEORIES

We began this chapter by noting that before we can develop theories about the political economy of education in Latin America and elsewhere, we need to identify the main patterns and puzzles that require an explanation. The patterns we document in this chapter suggest three main sets of questions for future studies on the political economy of education.

First, what explains the different combinations of educational access and quality that exist around the world (i.e., high-high, high-low, low-high, low-low)? For example, why are most Latin American countries characterized by relatively high levels of access to education but below-median math and science skills, whereas most Asian countries, by contrast, have relatively low levels of access to education but above-median math and science skills? One common argument is that there is a trade-off between the quantity and quality of education. However, there are regions (e.g., Western Europe) where both access and educational quality are relatively high, and regions (e.g., Sub-Saharan Africa) where both access and quality are low. Beyond the obvious differences in GDP and state capacity between regions that might explain this, which *political* factors contribute to these patterns, and how? For example, to what extent does the influence of Communist ideology and/or the Soviet Union's deliberate efforts to promote rapid industrialization contribute to explain why Eastern European countries, despite similar income levels, devote more resources to education and exhibit better skills than Latin American countries? What is the educational legacy of the period of right-wing military dictatorships in the region? What education policies have been adopted by left-wing political parties and populist leaders in Latin America, and to what extent have these policies promoted or harmed the acquisition of skills among the population? To answer these questions, it will be crucial to analyze data on skills because, as documented in this chapter, indicators of educational access are a poor proxy for skill levels in Latin America.

Second, why does the degree to which schools focus on teaching political values in Latin America in 2021 look so similar to 1945? This is a puzzle, first, because the region today is a lot more democratic than in 1945, and second, because the rest of the world *did* experience considerable change in its emphasis on teaching values. At least three plausible explanations are worth examining: first, political capture of national curriculums by non-democratic elites who anticipate a future transition to democracy; second, path dependence in education policymaking (e.g., because of too many veto points, lack of technical capacity within ministries, resistance to change by teachers or bureaucrats, etc.); and third, competing education models pushing the region in opposite directions and cancelling each other (e.g., technocrats and international organizations pushing toward less emphasis on teaching political values and new political actors representing historically underrepresented groups pushing toward more emphasis on values).

Finally, why is it relatively easy to become a teacher in Latin American countries compared to other regions? Why has the region lagged the rest of the world in raising the educational standards for entry into teaching in the last seven decades? While one common argument is that strong, independent teacher unions contribute to this situation by blocking reforms that would raise these standards, our exploratory cross-national analysis does not support this view. If anything, the opposite appears to be true. Future research should revisit existing theories of teacher unions, which cannot explain the puzzling pattern that standards to become a teacher are higher in countries where teacher unions are more independent from political authorities. One possible explanation is that the low standards to become a teacher in Latin America reflect governments' own interest in using teaching jobs to promote the social mobility of the lower classes. In such contexts, teacher unions who care about the prestige of the teaching profession *and* are independent from political authorities may be in a better position to challenge the government's teaching policies than unions that are captured by the government. Understanding governments' own interest in maintaining low entry standards to become a teacher is a crucial area for future research.

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