WHEN DOES EDUCATION PROMOTE POLITICAL PARTICIPATION? THE ROLE OF CURRICULUM POLICIES[1]

Agustina S. Paglayan[2]

There has been renewed global interest in the role of education to strengthen democracy by forming engaged and informed citizens. However, past studies find mixed evidence on the impact of years of schooling on political participation. I posit that the impact of schooling will depend on the content of education. The evidence for this argument comes from a study of a national primary school curriculum reform in Mexico under the PRI regime and its long-term impact on individual voting behavior. Analyses of the entire corpus of primary school textbooks from 1960 to 2000 using content analysis and automated text analysis shows that, for decades, school textbooks characterized the PRI regime as a democracy and placed heavy emphasis on teaching future citizens that their most important civic duty was to vote. However, when electoral support for the PRI began to erode, the regime reformed the curriculum to reduce the importance given to democracy and voting. Difference-in-differences estimates of the long-run impact of this reform using unique administrative records of voting behavior show that exposure to the reformed curriculum during primary school reduced the propensity to vote during adulthood. The results show that education systems are a key policy tool that enable autocratic regimes to have enduring effects even after their collapse, and highlight the importance of the curriculum for shaping political outcomes.

[1] Comments appreciated. Paglayan thanks the Spencer Foundation for funding this project, and Marco Alcocer, Gala Ledezma, Paola Mejía, and Andrés Santos for excellent research assistance.

[2] Assistant Professor, Department of Political Science and School of Global Policy and Strategy, UCSD, e: apaglayan@ucsd.edu

1 INTRODUCTION

In recent years, concerns about democratic erosion have generated renewed interest in the role that education can play to strengthen democracy. In the United States, concerns about the future of democracy after the election of Donald Trump in 2016 (Levitsky and Ziblatt 2018) prompted public intellectuals and liberal media outlets to declare that "public schools are failing at . . . preparing young people to be reflective citizens who value liberty and democracy."[3] If not driven by schools' failure to promote democracy, analysts wondered, "how else to explain . . . the abstention of the 42% who didn't vote, skirting what is arguably an adult citizen's most important responsibility?"[4] Around the world, too, international organizations such as the United Nations and the Organization of American States have renewed their call on governments to invest in education during "a time of democratic backsliding," arguing that schools are essential for the consolidation of democracy because of their ability to form responsible, informed, and engaged citizens.[5]

Although a long theoretical tradition argues that education, by shaping individuals' moral character and civic behavior, plays a crucial role in promoting the proper functioning and stability of democracy (e.g., Rousseau 1755; Dewey 1916; Lipset 1960; Almond and Verba 1962; Putnam 1995), the empirical evidence for this argument is mixed. While there is a well-documented positive correlation between educational attainment and political participation, experimental and quasi-experimental studies that assess whether more years of schooling *lead to* more political participation reach conflicting conclusions. Some studies of the U.S. (e.g., Milligan, Moretti and Oreopoulos 2004; Dee 2004; Sondheimer and Green 2010), Nigeria (Larreguy and Marshall 2017), and Benin (Wantchekon, Klasnja and Novta 2015) find support for the claim that additional years of schooling lead to increased participation in politics. Other studies of the U.S. (Tenn 2007; Kam and Palmer 2008; Berinsky and Lenz 2011) and the U.K. (Milligan, Moretti and Oreopoulos 2004) find that the relationship between educational attainment

[3] Kahlenberg, Richard E. and Clifford Janey. "Is Trump's Victory the Jump-Start Civics Education Needed?" *The Atlantic*, November 10, 2016. Available at https://www.theatlantic.com/education/archive/2016/11/is-trumps-victory-the-jump-start-civics-education-needed/507293/

[4] Campoy, Ana. "Teaching our children to cherish democracy will be all the more critical in Trump's America." *Quartz*, December 11, 2016. Available at https://qz.com/839041/american-values-are-at-risk-if-we-dont-teach-kids-what-it-is-to-be-american

[5] https://www.unesco.org/en/education-just-democratic-societies; https://www.oas.org/en/media_center/press_release.asp?sCodigo=E-025/23

and political participation is spurious: the same factors that prompt some individuals to acquire more schooling also prompt them to participate more in politics. Yet other studies in Zimbabwe (Croke et al. 2016) and Western Kenya (Friedman et al. 2016) find evidence of a *negative* effect of years of schooling on political participation. The reasons behind these mixed findings have received little attention.[6] Why does schooling sometimes increase, and other times decrease, political participation?

I propose that the content of the primary school curriculum is a key mechanism by which schools shape long-term political behavior, helping explain why additional years of schooling promote political participation in some contexts and dampen it in others. The starting point of my argument is the acknowledgement that the term "education" can have widely varying meanings across different contexts as a function of what specific knowledge, values, and behaviors are taught in schools—that is, what *content* students encounter. The main policy tool by which governments shape the content of education is the official curriculum, which includes the list of mandatory subjects and approved textbooks. Governments can provide education with the goal of fostering critical thinking skills, personal autonomy, and individual empowerment (Levinson 1999), or they can turn to schools mainly as a mechanism of social control, teaching students to be obedient and respect the status quo (Freire 1970; Bowles and Gintis 1976; Friedman et al. 2016; Paglayan 2022). The curriculum typically reflects how governments balance these and other competing goals. I hypothesize that when the curriculum is sufficiently well implemented, students will tend to internalize the political values and behaviors it teaches. In particular, schools that emphasize the importance of political participation are likely to form future citizens who participate more in politics than schools that do not emphasize participation.

The primary school curriculum has been the subject of intense political fights since at least the nineteenth century, and that alone highlights the importance of studying its impact. In nearly all countries today the national government is the sole or main authority in charge of determining the list of mandatory subjects, and in three-fourths of countries,

[6] One exception is Croke et al. (2016), who argue that the relationship between schooling and political participation is conditional on the type of political regime. In democracies, more years of schooling lead to greater individual empowerment, which translates into political participation. By contrast, in autocracies, educated citizens may refrain from participating in politics due to their greater awareness of the futility of their efforts and concern that participation may help legitimize the regime.

all school textbooks are centrally approved by a national authority.[7] Efforts to regulate the content of education reflect the pervasive belief that the knowledge, values, and behaviors that children are taught in school will shape their political behavior as adults. From the fight over textbooks in the U.S. since 2020 to recent curriculum and textbook reforms under Viktor Orbán in Hungary,[8] Narenda Modi in India,[9] Recep Erdoğan in Turkey,[10] or the Communist Party in China, these examples illustrate the pervasiveness of this belief across the ideological spectrum and in both democracies and autocracies. Yet, despite roughly two centuries since governments began to regulate the primary school curriculum (Paglayan 2021), we know surprisingly little about whether the curriculum shapes long-term political behavior in the direction intended by policymakers.

To make headway in this area, I conduct an empirical study of a national primary school curriculum reform in Mexico under the PRI regime and its long-term impact on individual voting behavior. The study has two parts. First, based on an analysis of the entire corpus of primary school textbooks from 1960 to 2000 using both automated text analysis and qualitative content analysis, I show that, for decades, school textbooks characterized the PRI regime as a democracy and placed heavy emphasis on teaching future citizens that their most important civic duty was to vote. However, after electoral support for the PRI eroded visibly during the 1988 presidential election, in 1994 the regime introduced a new set of textbooks that reduced the importance placed on voting.

The second part of the study assesses the effect of this curriculum reform on political participation. To measure participation, I use a unique administrative database on individual-level turnout in national elections as recorded by Mexico's centralized electoral authority, the *Instituto Nacional Electoral* (INE). Using a difference-in-differences framework, I estimate the effect of the 1994 reform by comparing changes in turnout among cohorts of individuals with primary education before and after the reform vis-à-vis changes in turnout among cohorts that did not receive any formal education. The

[7] According to data for 159 countries in 2020 from the Varieties of Indoctrination in Education and the Media (V-Indoc) dataset (Neundorf et.al. 2023), a national authority is either "solely" or "mostly" responsible for determining the curriculum in 116 (72.96%) and 36 (22.64%) countries, respectively, and all textbooks are centrally approved by a national authority in 120 countries (75.47%).

[8] https://www.cnn.com/2019/02/01/europe/hungary-education-orban-textbooks-intl/index.html

[9] https://newlinesmag.com/argument/rewriting-indias-history-through-school-textbooks/

[10] https://www.impact-se.org/wp-content/uploads/The-Erdogan-Revolution-in-the-Turkish-CurriculumTextbooks.pdf

findings suggest that, in line with the reform's elimination of previous content that promoted turnout in elections, exposure to the new curriculum during primary school depressed the likelihood of voting among affected cohorts by around 3-4 percentage points.

The study contributes to our understanding of how education shapes political behavior first and foremost by unpacking the black box of "education" and identifying a key mechanism by which education systems can influence political behavior: the national curriculum. Despite taking center stage in political debates over education policy, the national curriculum has received little attention in studies of how education shapes individual political outcomes. The nascent literature that examines the consequences of curriculum reform focuses on how curriculum policies shape national identity, not electoral participation (Clots-Figueras and Masella 2013; Fouka 2020; Chen, Lin and Yang 2023). An exception is Cantoni et.al. (2017), which examines the impact of a high school curriculum reform in China and finds evidence that the new curriculum shaped political values but not participation in local elections. The main limitation of that study is its reliance on self-reported data about political outcomes, which makes it difficult to know whether the curriculum reform in fact altered individual values or whether individuals simply learned what they should say in public—a particularly important concern in autocratic regimes, where preference falsification in public spheres is common (Kuran 1991). Another limitation of that study is that the survey was administered among college students from an elite university, which raises concerns about the generalizability of the findings. The study aims to improve upon this research by using *observed* instead of self-reported political behavior obtained from *comprehensive* administrative turnout data covering the vast majority of Mexican citizens.

Although the study relates to a large literature that examines the impact of civic education on political outcomes, a key contribution is to focus on a national curriculum reform that affected all individuals in primary education. Most studies of the effect of civic education focus on a particular program or intervention that affected a relatively small number of students or schools.[11] There is increasing evidence that the effects of relatively small education interventions fail to replicate when such interventions are scaled up (Bold et.al. 2018). Given that education policy—including curriculum policy—is the main tool available to governments seeking to shape the content of education, studying the effects

[11] See Campbell (2019) for a literature review.

of the official curriculum is particularly important to understand how governments can shape political outcomes.

Moreover, the paper redirects the literature's attention to the primary school years as a potentially crucial period during which long-term political outcomes are molded. For most of the history of public education, governments have focused on providing mass *primary* education, often with the intention of shaping future citizens' loyalties, predispositions, and behavior (Darden and Grzymala-Busse 2006; Darden and Mylonas 2016; Aghion et.al. 2019; Paglayan 2021). Yet we know little about whether primary education indeed shapes political values and behavior in the direction intended by governments because most studies have focused on the effect of secondary and higher education on political outcomes.[12] Understanding the role of primary education is crucial because this is the most common type of education available to all citizens.

Finally, this study contributes to our understanding of authoritarian persistence and the ability of authoritarian regimes to have enduring effects even after their collapse. I demonstrate that education systems are a key tool that allow autocratic regimes to have long-lasting effects that outlive their existence. By highlighting the importance of the national curriculum, the results help refine our understanding of whether and when schools can actually influence long-run political behaviors in ways that support or undermine democracy.

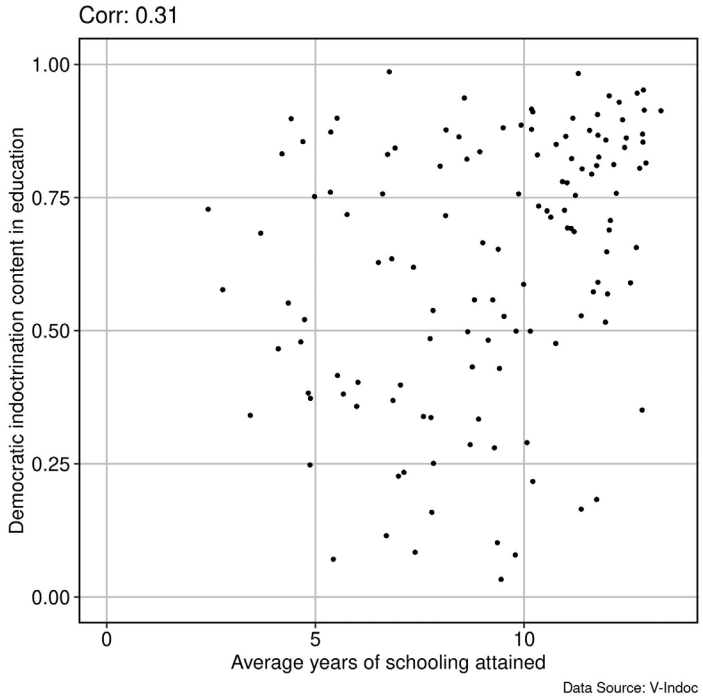
2 CONCEPTUALLY LINKING THE SCHOOL CURRICULUM AND ADULT POLITICAL BEHAVIOR

While past studies tend to use the terms "education" and "educational attainment" interchangeably, the starting point of this argument is the conceptual distinction between two different aspects of education: *educational attainment or schooling*, which refers to the amount of time that a person has attended school, and the *content of education*, which refers to the knowledge, values, and behaviors that schools aim to teach. The importance of distinguishing between these concepts is illustrated by Figure 1, which shows cross-country data from 2015 on average years of schooling (x-axis) and a measure of the emphasis that schools place on teaching democratic norms and principles (y-axis). As is clear from the figure, for any given level of educational attainment, there is considerable variation in the content of education to which students are exposed. I posit that this

[12] See Campbell (2019) for a literature review. An exception is Holbein (2017).

variation in the content of education can help explain the varied effect of educational attainment on political participation detected in past studies.

Figure 1. Educational attainment and democratic content of education by country, 2015



SOURCE: Varieties of Indoctrination in Education and the Media (Neundorf et.al. 2023).

A key policy tool by which most governments seek to influence the content of education is the national curriculum. I define the curriculum as the list of mandatory subjects and approved school textbooks. Additional tools available to governments seeking to shape the content of education include the establishment of policies and procedures for teacher training and recruitment, and the direct provision of teacher training programs—often with an eye toward training teachers to implement the official curriculum—and the school inspection system, which seeks to encourage compliance with education laws and regulations, including the official curriculum.

I focus particularly on the primary school curriculum because a large neuroscience and developmental psychology literature shows that the experiences, environment, and language we are exposed to during early childhood—from ages 0 to 8 years—have strong long-lasting effects on our cognitive, social, and emotional development (Phillips and Shonkoff 2000; Heckman 2000). Indeed, Holbein (2017) presents experimental evidence on the effect of elementary school experiences on individuals' likelihood to vote during

adulthood, while other studies show that early education experiences influence not only voting participation but also criminal behavior.[13]

The content of education of course does not depend on governmental actions alone. The individual-level decisions of teachers and parents also matter. Teachers' behavior in the classroom shapes the implementation of the curriculum. A teacher may fail to implement the curriculum because they lack the skills to do so—a key problem in many countries in Sub-Saharan Africa (Bold et.al. 2017)—and/or because they lack the motivation to implement the government's preferred policy. There are numerous well-known examples of teachers' resistance against the official primary school curriculum from across time and space, including during the July Monarchy in France (Toloudis 2012), Argentina during the first two administrations of Juan D. Peron's (Gvirtz 1999), and Venezuela under Hugo Chávez (Abbott, Soifer and Vom Hau 2017).

Two other actors whose behavior can support or undermine the government's curriculum are parents and religious organizations. First, parents who are strongly opposed to the content of the curriculum taught in schools may put in extra effort into the education of their children to counterbalance schools' influence on their children's values. An example of this comes from the United States after World War I: when states banned elementary schools from providing instruction in German, German immigrants invested more heavily in solidifying their children's German identity, for instance by sending their children to Sunday Schools operated by the Lutheran Church in their neighborhood, which resulted in the language ban backfiring and encouraging children to identify more, not less, with their German identity (Fouka 2020). While in this example the Lutheran Church did not increase its provision of education—what increased was demand—the case of Indonesia provides an example where, in response to a governmental expansion of primary education to inculcate a secular ideology, religious organizations responded by increasing the provision of Islamic secondary schools, which resulted in the government's failure to inculcate more secular values (Bazzi et.al. 2023).

Taking into account both the susceptibility of young children to external influences as documented by neuroscience, as well as the possible actors who may resist a government's curriculum, I hypothesize that *when the curriculum is sufficiently well implemented, students will tend to internalize the political values and behaviors it teaches*.

[13] Others also emphasize the key formative period ranging from age 7 up to the early teens (e.g., Bartels and Jackman 2014; Neundorf, Niemi and Smets 2016).

In the remainder of the paper, I study the consequences of a well-implemented curriculum reform in Mexico. As describes in the next section, several factors contributed to the reform's proper implementation, including public school teachers' political alignment with the regime and the centralized educational authority's long-standing capacity to distribute textbooks.

3 CONTEXT

Mexico offers a good opportunity to study curriculum changes that affect the entire population because of its system of mandatory, uniform, and free national textbooks. Mexico's centralized electoral system and very high voter registration levels among adult citizens also allow us to examine the effect of the curriculum reform for most of the primary-attending population. Furthermore, Mexico's transition to democracy in 2000 also makes it an ideal case to study if the content of education has a long-term impact. The Mexican case allows us to explore whether the education received under an authoritarian regime continues to have an impact in adults' political behavior even after the regime's demise.

3.1 Elections in Mexico under the PRI regime

Mexico experienced most of the twentieth century under a hegemonic party regime. The PRI, or *Partido Revolucionario Institucional*, ruled uninterruptedly for 71 years, from 1929 to 2000, when the country transitioned to a democracy. Although the PRI regime allowed multi-party elections to be held, the PRI won all the Senate, gubernatorial, and presidential elections from 1929 to 1988 (Cantú 2019). Holding elections regularly not only created a democratic façade that boosted the regime's legitimacy; these elections were a key strategy that the PRI used to prevent factions within the party from splitting and challenging the PRI (Magaloni 2006). Because of the PRI's vast political machine, citizens feared that the regime would exclude them from key economic benefits if they failed to vote for the PRI. This helped the PRI win elections by a landslide. In turn, these victories generated "a public image of invincibility" that helped "discourage coordination among potential challengers—most fundamentally, those coming from within the party. High turnout and huge margins of victory signaled to elites that the ruling party's electoral machine was unbeatable because citizens supported the regime. The message to the disaffected party politicians was that the only road to political success was the ruling party, and that outside of it there was nothing but political defeat" (Magaloni 2006, 8-9).

The presidential election of 1988, which brought the PRI's candidate Carlos Salinas de Gortari to power with 50.4% of the vote, was the first national election in which the regime turned to massive fraud "as a last-ditch effort to ensure the PRI's victory" (Cantú 2019, 720). Electoral support for the PRI already showed some signs of erosion among the popular sectors and business groups during the second half of the 1980s, fueled partly by the debt crisis of 1982. Discontent with the regime manifested in the 1985 legislative election, where the PRI's vote share dropped to 64% (Cantú 2019, 711)—a historic low that nonetheless still gave the party a clear supermajority in the polls. In fact, the PRI did not foresee its unpopularity going into the 1988 presidential elections (Cantú 2019). Opposition candidates during this election "focused on mobilizing the protest vote and emphasizing that a PRI defeat was the first step toward democratizing the country" (Cantú 2019, 712). Preliminary vote counts showing the PRI's defeat in Mexico City and surprisingly narrow margin between Salinas and opposition candidate Cárdenas "caused the regime to rely on blatant and rudimentary fraud" (Cantú 2019, 723). For three days, the regime suspended the public vote count, and district councils controlled by the PRI altered the vote tally sheets inflating the number of votes for Salinas and deflating those for Cárdenas (Cantú).

In an atmosphere of controversy surrounding the PRI's fraudulent victory and widespread protests against the regime, Salinas adopted important electoral, economic, and education reforms. Facing considerable international and domestic pressure to improve the transparency of elections, a series of electoral reforms were introduced in 1990, 1993, and 1994, including the creation in 1990 of a centralized electoral authority, the *Instituto Federal Electoral* (IFE), charged with organizing and monitoring elections, and a subsequent reform in 1994 that made the IFE truly independent from the government (Magaloni 2006, 239-245). A program of neoliberal reforms was also introduced to boost the economy and address the economic grievances that had contributed to the erosion of support for the regime. Finally, Salinas also introduced a new primary school curriculum, which I describe next.

3.2 Mexico's primary school curriculum

Mexico has a long history of centralized attempts to regulate the primary school curriculum going back to the passage of the first national education law in 1843, which established a common curriculum and stipulated the creation of a set of textbooks for all teachers to follow (Paglayan 2021). However, throughout the nineteenth and well into

the twentieth century, the central government lacked the administrative and fiscal capacity to expand primary education and enforce the implementation of the sanctioned curriculum (Vaughan 1982; Solana, Cardiel Reyes, and Bolaños Martínez 1981; Llinás Alvarez 1979).

It was in the 1920s that the government's capacity improved sufficiently to allow the enforcement of education laws and the expansion of primary education (Vaughan 1982; 1975). When Alvaro Obregón took power in 1920, he embarked on a process of intensive state-building which entailed the creation of new sources of fiscal revenue including a new income tax (Aboites Aguilar 2003) and the establishment of centralized bureaucracies to regulate all aspects of society and the economy. Among these was the creation in 1921 of the *Secretaría de Educación Pública* (SEP), led at first by José Vasconcelos. Under Vasconcelos, the new SEP published and distributed textbooks and expanded primary schooling at an unprecedented rate, especially in rural areas.[14] Since then, the SEP remains the only agency with the authority to regulate the curriculum and many other aspects of Mexico's education system (Llinás Alvarez 1979).

The centralization of the primary school curriculum under the SEP's authority deepened further after 1959, when the PRI regime adopted a new policy on textbooks with the objective of further standardizing the curriculum nationwide. Before that year, the SEP had published the list of approved textbooks for schools to choose from, and also distributed some of these texts to public primary schools. However, in 1959 the PRI adopted a policy which gave a new commission within the SEP the responsibility to produce and distribute for free a unique set of mandatory and uniform national textbooks for all primary schools (Villa Lever 2009). In essence, this policy—which remains in place to this day—gives the national government monopoly rights to create a unique textbook for every grade and subject, and stipulates their mandatory use by all public and private primary schools. The first set of textbooks were distributed by the SEP in 1960, and major reforms to the content of the textbooks were implemented in 1972, 1994, and 2010.

3.3 The 1994 curriculum reform

As part of the package of reforms advanced after Salinas assumed power, in 1992 the federal government, the 31 state governors, and the national teacher union (SNTE) signed the National Agreement for Modernization of Basic Education (*Acuerdo Nacional para la*

[14] The primary school enrollment rate increased from 30 to 62 percent between 1920 and 1925 (Lee and Lee 2016)

Modernización de la Educación Básica, or ANMEB). The agreement included three pillars: (i) a fiscally-motivated transfer of personnel decisions (i.e., teacher hiring and firing, teacher working conditions, etc.) and the day-to-day management of schools from the federal to the state governments; (ii) an extension in the number of years of compulsory schooling to include not just primary but also lower secondary education (effective from 1993 on); and (iii) an overhaul of the national curriculum and the creation and distribution of a complete new set of mandatory, uniform, and free textbooks for each primary education grade and subject (implemented in 1994). It is important to note that the decentralization of education (the first pillar) was limited. First, regarding personnel decisions, following negotiations with the SNTE, the federal government established a teacher statute that unified career development rules and minimum working conditions across the country, agreed to nationwide teacher pension benefits and salary increases, and earmarked the states' education budget to guarantee the uniformity of teachers' working conditions. Second, regarding the day-to-day management of schools, while states became responsible for education provision, schools had to abide by national education laws and regulations. In particular, the federal government retained control over the evaluation of teachers and the education system, funding, the development of curriculum plans for all education levels, and the creation and distribution of mandatory, uniform, and free primary school textbooks (Arnaud 1994; Murillo 1999).

As part of the overhaul of the curriculum advanced during Salinas's presidency, a total of 39 new national textbooks were rolled out by the SEP in 1994 for all subjects and grades (Latapí Sarre 2004). Fourteen of these were selected by the SEP through a public bidding process and the remainder were produced in-house by the SEP (Celis García 2018, 437). In addition to these new national textbooks, the national government also allowed the introduction of a set of state-specific History textbooks produced for third grade alone—a feature I exploit in some of the analyses later in the paper (Celis García 2018, 437).

Two key factors facilitated the implementation of the curriculum reform of 1994. First, the SEP already had an infrastructure in place to distribute new books to every primary school student. The 1959 policy for the creation and distribution of mandatory and free textbooks stipulated that rather than belonging to the school or teacher, textbooks are the property of the student. As a result, the SEP had to develop the capacity to ensure that every student received all the textbooks they would need for the upcoming year at the beginning of the school year. When the first textbooks were introduced in 1960, the SEP used "trucks, jeeps, cars, bicycles, trains, and airplanes" to distribute the books

throughout the territory (Greaves Laine 2001). Over the decades, textbook distribution was perfected by partnerships between the SEP and numerous national agencies and ministries, state governments, municipalities, civic associations, and parents' associations (Celis García 2018, 99-101).

Second, teachers did not resist the implementation of the new textbooks. On the contrary, throughout most of the PRI regime, public school teachers and the union that organized them, the SNTE, operated as brokers of the PRI, mobilizing electoral support in their local community and monitoring how parents voted. When the PRI introduced its new textbook policy in 1959, teachers voiced support for it (Greaves Laine 2001). The textbook reform introduced under Salinas encountered opposition from some newspapers and public intellectuals—among other reasons because of its favorable depiction of Salinas—but was not opposed by teachers. The SNTE and the vast majority of teachers remained loyal to the PRI, as they had been for decades (Celis García 2018). The Salinas administration further cultivated this loyalty by increasing real teacher salaries by 35 percent between 1988 and 1994, which resulted teachers moving from being the lowest-paid group to the second-highest paid group of public-sector employees (Murillo 1999).

4 CONTENT OF THE NEW TEXTBOOKS

In this section I characterize the content of the mandatory primary textbooks school textbooks introduced by the Salinas administration in 1994. I begin by summarizing the findings from past qualitative studies of the 1994 textbooks. I then present my own findings, which are aligned with past studies.

4.1 The 1994 Reform According to Existing Studies

According to existing qualitative studies of the 1994 textbooks and their immediate predecessors (Villa Lever 2009; Celis García 2018), a key feature of the 1994 curriculum reform was that it eliminated important civics material related to democracy, citizenship, and political participation that used to be emphasized prior to the reform. A noteworthy feature of the new textbooks was that, unlike the previous textbooks, there was not standalone textbook for Civic Education. Instead of having dedicated lessons devoted to individual political rights and responsibilities, as was the case before 1994, the reform incorporated teaching on civil rights and duties into the History textbooks.

Moreover, for those concepts that did remain part of the curriculum, the new textbooks favored brief and simplified explanations of complex concepts and processes, encouraging students to learn by rote. In a detailed study, Celis García (2018) concludes

that the new textbooks increased the emphasis on rote memorization rather than a deep engagement with the content. While the pre-reform textbooks emphasized concepts like cooperation, solidarity, and social responsibility as important components of citizenship and democratic education, the new texts introduced in 1994 focused almost exclusively on stating procedural and institutional facts. They mentioned the possibility of electoral participation as part of the legal rights of Mexican citizens, but, unlike pre-reform texts, they did not explain why various forms of political participation, including voting, were substantively important. In short, the vision of citizenship and political participation conveyed by the post-reform textbooks was one of passivity and compliance with externally imposed duties. This contrasts with pre-reform textbooks, which reflected a more complex understanding of concepts related to democracy and citizenship (Celis García 2018).

According to Celis García (2018), the vision of citizenship and political participation conveyed by the new textbooks was one of passivity and compliance with externally imposed duties. This contrasts with pre-reform textbooks, which reflected a more complex understanding of concepts related to democracy and citizenship.

In what follows, I corroborate this pattern and expand upon the existing assessments of the curriculum reform through automated text analysis and qualitative content analysis of the textbooks before and after the reform.

4.2 Structural Topic Modelling to Uncover Topic Prevalence in Mexican Textbooks from 1960 to 2000

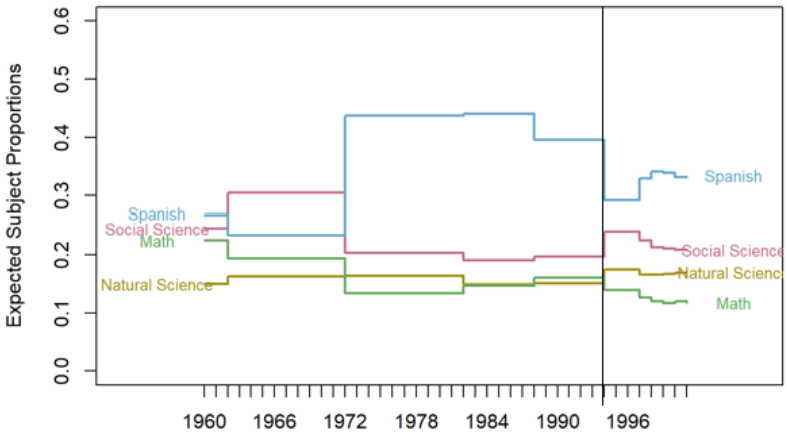
I use structural topic models to estimate the underlying prevalence of topics across all 768 national primary school textbooks distributed by the PRI from 1960 to 2000. To conduct the analysis, I first processed each textbook using optical character recognition software and digitized relevant metadata. Because I am agnostic about the number of topics across curriculum reforms, I adopted a data-driven approach. I settled on a model with 30 topics, which provides a good balance of high exclusivity and semantic coherence, on the one hand, and low residuals, on the other. The structural topic models include, as covariates for each individual textbook, its reform wave, its nominal subject, its grade, and whether it is a workbook. After the models were estimated, we manually labeled each topic by inspecting the words with the highest probability and FREX scores within each topic. Two independent coders conducted this step, arriving at remarkably

similar labels for all topics. To facilitate interpretation and visualization of the results, we also aggregated the topics into subjects.

Figure 1 presents the expected proportions over time of subjects and broad topics. Focusing on the changes introduced by the 1994 reform, which is represented by the vertical black line, Panel A shows an increase in the prevalence of topics related to Social Science in 1994, little change in the prevalence of topics related to the teaching of Math and Natural Science, and a decline in the prevalence of topics related to Spanish. In Panels B and C we examine in greater depth the content of Social Science textbooks, estimating a structural topic model for the national social science textbooks used every year.[15] In Panel B we group social studies topics into four subjects—History, Geography, Civics Education, and Economics—and show the expected proportions over time for each of these. As can be seen, the 1994 increase in the prevalence of topics related to Social Science shown in Panel A is driven by an increase in the prevalence of History and Geography topics. This is consistent with the fact that both of these emerged as standalone subjects with their own textbooks as a result of the reform. By contrast, the expected topic proportion of Civics Education remains notably flat before and after 1994.

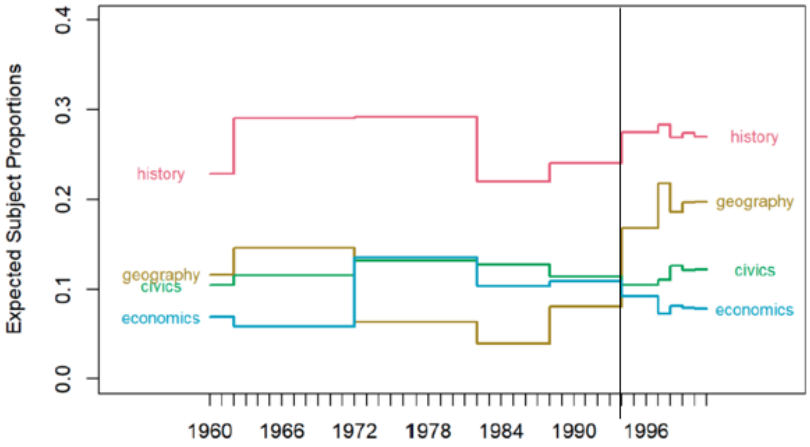
Figure 1: Prevalence over Time (1960-2000) of Subjects and Topics

Panel A: Prevalence over Time of Four Main Subjects: Spanish, Math, Social Science, and Natural Science

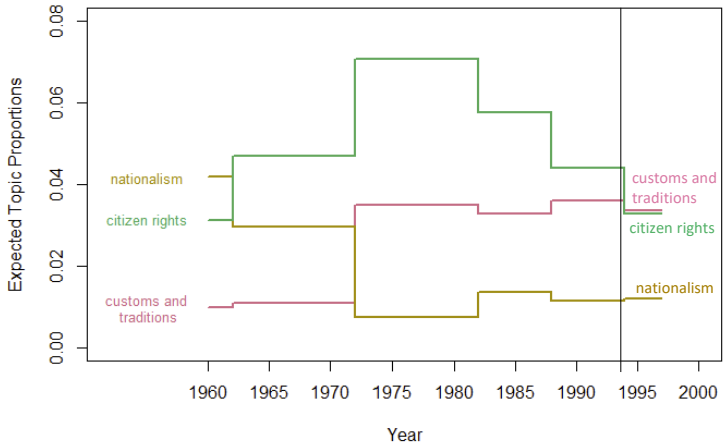


[15] The names of the subjects and textbooks vary across reforms. In some years, there is a single Social Science or Social Studies textbook. In others, there are separate textbooks for History, Geography and/or Civics Education. In other years, there is a combination of both (e.g., a Social Science or Social Studies textbook for 1st and 2nd grade, and more specific textbooks for subsequent grades).

Panel B: Prevalence over Time of Social Studies by Topic: History, Geography, Civics, and Economics



Panel C: Prevalence over Time of Civic Education Topics: Citizen Rights, Nationalism, and Customs and Traditions



To better understand how the civics education content taught in primary schools changed with the 1994 reform, in Panel C of Figure 1 I present the expected proportions over time of the three main topics that form part of the Civics Education category: citizen rights and duties, nationalism, and customs and traditions. The 10 main stems that fall under the "citizen rights and duties" topic are "gob," "der," "pais," "ley," "cons," "pod," "social," "deb," "ciudadan," "derech," "legisl," and "eleg." These correspond to the words government/ govern, right(s), country, law(s), constitution/ constitutional, power, social, duty/ must, citizenship/ citizen(s), right(s), law/ legislature, and vote/ choose/ elected. The topic "Nationalism" includes stems such as "patri," "mexican," "amor," "himn," "honr," "glori," "hij," "padr," and "alma," referring to patriotism/ fatherland, Mexican, love,

anthem, honor, glory, son/ daugther, father, and soul. The topic "Customs and traditions" includes stems such as "cultur" "pueblo," "dios," "fiest," "music," "tradicion," "religi," "grup," "danz," "ceremonia," which refer to culture/ cultural, the people, god, festivities, music, tradition, religion, group, dance/ dancing, and ceremony/ ceremonial.

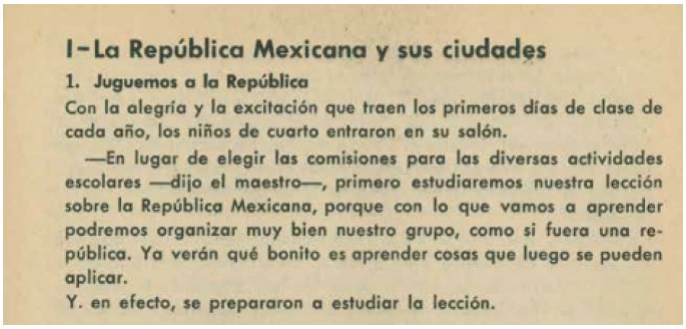
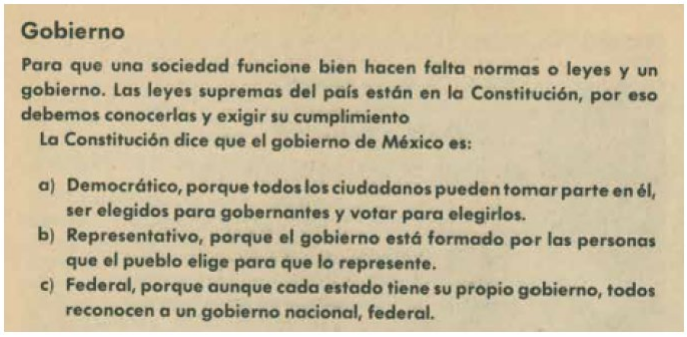
The findings presented in Panel C suggest that while the emphasis placed on inculcating nationalism and teaching students about Mexican customs and traditions experienced little change in the 1994 textbooks, there was a notable decline in the importance given to teaching students about their future political rights and civic duties, including their right and responsibility to vote—a finding that echoes the conclusions of existing qualitative studies.

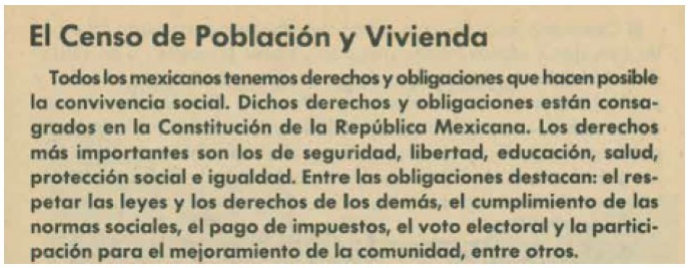
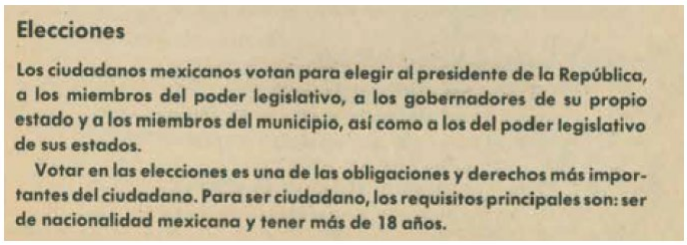
4.3 Qualitative Analysis of the Pre- and Post-Reform Textbooks

A qualitative analysis of how democracy and citizenship are covered in the textbooks reveals important differences between the pre- and post-reform textbooks. To analyze the content of each textbook, I identified every time that the textbook discussed the individual right or duty to vote, voting procedures, the individual right to run for office, and any practical exercises in which students simulated electing their own representatives or participated in some collective decision-making problem.

A comparison of 4th-grade textbooks helps illustrate the main findings. Figure 2 provides excerpts from the Chapter 1 of the Social Sciences textbook used before 1994. Before the reform, the opening chapter of the Social Studies 4th-grade textbook begins by noting that Mexico is a republic, and invites children to learn about how Mexico's political institutions function "because with what we will learn we will be able to organize our group well" and choose commissions for the various school activities.

Figure 2: Excerpts from Chapter 1 of the Pre-1994 4th-Grade Social Sciences Textbook. *This Content was Eliminated by the 1994 Reform.*

Original excerpt (in Spanish)	English Translation
 **I–La República Mexicana y sus ciudades** **1. Juguemos a la República** Con la alegría y la excitación que traen los primeros días de clase de cada año, los niños de cuarto entraron en su salón. —En lugar de elegir las comisiones para las diversas actividades escolares —dijo el maestro—, primero estudiaremos nuestra lección sobre la República Mexicana, porque con lo que vamos a aprender podremos organizar muy bien nuestro grupo, como si fuera una república. Ya verán qué bonito es aprender cosas que luego se pueden aplicar. Y, en efecto, se prepararon a estudiar la lección.	**I-The Mexican Republic and its cities** **1. Let's play to be a Republic** With the joy and excitement of the first days of class each year, 4th-grade children enter their classroom. —Before choosing commissions for our various school activities– says the teacher—let's first study our lesson about the Mexican Republic, because with what we will learn we will be able to organize our group well, as if it were a republic. You will soon see how nice it is to learn some things that you can later apply. And, indeed, they get ready to study the lesson.
 **Gobierno** Para que una sociedad funcione bien hacen falta normas o leyes y un gobierno. Las leyes supremas del país están en la Constitución, por eso debemos conocerlas y exigir su cumplimiento La Constitución dice que el gobierno de México es: a) Democrático, porque todos los ciudadanos pueden tomar parte en él, ser elegidos para gobernantes y votar para elegirlos. b) Representativo, porque el gobierno está formado por las personas que el pueblo elige para que lo represente. c) Federal, porque aunque cada estado tiene su propio gobierno, todos reconocen a un gobierno nacional, federal.	**Government** For a society to function well it needs norms or laws and a government. The supreme laws of the country are in the Constitution, which is why we need to know them and demand compliance with them. The Constitution says that the Mexican government is: a) Democratic, because all citizens can form part of it, be elected to govern and vote to choose their government.

	b) Representative, because the government is formed by individuals that the people chose to represent them. c) Federal, because although each state has its own government, all acknowledge the national, federal government.
 **El Censo de Población y Vivienda** Todos los mexicanos tenemos derechos y obligaciones que hacen posible la convivencia social. Dichos derechos y obligaciones están consagrados en la Constitución de la República Mexicana. Los derechos más importantes son los de seguridad, libertad, educación, salud, protección social e igualdad. Entre las obligaciones destacan: el respetar las leyes y los derechos de los demás, el cumplimiento de las normas sociales, el pago de impuestos, el voto electoral y la participación para el mejoramiento de la comunidad, entre otros.	**Population and Housing Census** All of us Mexicans have rights and duties that make social coexistence possible. These rights and duties are protected by the Constitution of the Mexican Republic. The most important rights are the right to safety, freedom, education, health, social protection, and equality. The most noteworthy duties are: to respect the laws and rights of others, to comply with social norms, to pay taxes, to vote in elections and to participate to support the improvement of the community, among others.
 **Elecciones** Los ciudadanos mexicanos votan para elegir al presidente de la República, a los miembros del poder legislativo, a los gobernadores de su propio estado y a los miembros del municipio, así como a los del poder legislativo de sus estados. Votar en las elecciones es una de las obligaciones y derechos más importantes del ciudadano. Para ser ciudadano, los requisitos principales son: ser de nacionalidad mexicana y tener más de 18 años.	**Elections** All Mexican citizens choose to elect the next president of the Republic, the members of the legislature, the governor of their own state, their municipal officials, and the legislature of their own state. Voting in elections is one of the most important duties and rights of a citizen. To be a citizen, the main requirements are: to be Mexican and to be at least 18 years old.

Se vota para elegir gobernantes.

Para que el gobierno funcione bien, deberá elegirse a personas honestas, capaces y responsables. Ha de vigilarse que cumplan con su deber y hagan uso adecuado de los recursos públicos. Pero no todos coinciden en quiénes son los mejores y cómo se ha de gobernar. Aquéllos que se ponen de acuerdo en cómo debe ser el gobierno, se reúnen y forman un partido político. Cada partido tiene su programa y sus candidatos. Todos los ciudadanos deben conocer dichos programas para elegir al que más convenga.

La confianza de los ciudadanos en las elecciones es producto del respeto a la voluntad popular, expresada en el voto. Sólo así, es posible la participación de la mayoría de los ciudadanos en el proceso electoral.

Organicemos nuestro grupo

Al terminar de leer la lección, los niños decidieron organizar su grupo como una república y vieron que necesitaban un territorio y lo señalaron con todo y sus fronteras. ¿Cuántos somos en el aula? Contaron alumnos y maestros y escribieron en el pizarrón.: "Población: 53". Después, se nombraron los tres poderes del gobierno: un niño fue elegido presidente del grupo, al que ayudarían comisiones de repartición de material, limpieza y orden. Se eligieron cinco niños que formarían el legislativo, representando cada uno a una de las filas del salón de clase. Por último, tres niños fueron elegidos para juzgar y cuidar de que se cumplan las leyes de la república.

Los niños aprendieron, organizaron su propio grupo y se divirtieron.

We vote to choose who governs us.

For a government to function well, we must choose honest, capable, and responsible people. We must monitor that they comply with their duty and that they make an adequate use of public resources. But not everyone agrees on who are the best or how they should govern. Those who agree about how the government ought to be assemble and form a political party. Each party has its platform and candidates. All citizens must known such platforms in order to choose the candidate that is best for them.

Citizens' trust in election stems from their respect for the popular will, as expressed through voting. Only then is it possible for the majority of citizens to participate in the electoral process.

Let's organize our group

After they finish the lesson, children decided to organize their group like a republic and realized they needed a territory and marked it with all its boundaries. How many of us are there in the classroom? They counted the

	number of students and teachers and wrote it on the blackboard: "Population: 53." Next, they named three branches of government: one child was elected president of the group, tasked with helping the commissions charged with distributing materials, cleaning and order. Five children were election to form the legislature, each representing one of the desk rows in the classroom. Lastly, three children were elected to judge and look after the enforcement of the republic's laws. The children learned, organized their own group, and had fun.

Next, the pre-reform textbook teaches children that the individual right to vote and to choose representatives is protected by the Mexican Constitution. Children learn that "the Constitution says that the Mexican government is Democratic, because all citizens can form part of it, be elected to govern, and vote to choose their government." They are also taught that the Constitution contains "the supreme laws of the country," which is "why we need to know them and demand compliance with them."

The pre-reform textbook then describes the main rights and duties of Mexicans, indicating that "to vote in elections and to participate to support the improvement of the community" are among "the most noteworthy duties." In another section dedicated to "Elections," children learn that they must vote "to elect the next president of the Republic, the members of the legislature, the governor of their own state, their municipal officials, and the legislature of their own state. Voting in elections is one of the most important duties and rights of a citizen."

According to the pre-reform textbook, the power of government is derived from the people: a good functioning government relies on the honesty, competence, and responsibility of elected leaders who represent the popular will; every citizen can vote for government officials, which leads to a representative government. Children learn that

they should examine each party's platform in order to choose the party that they think is best, and that once a government assumes power, "we must monitor that they comply with their duty and that they make an adequate use of public resources."

Finally, at the end of the chapter, after having learnt about the Mexican political system and their future role in it, students practice organizing their classroom as a representative democracy and electing one executive leader, five legislators, and three judicial leaders.

The *entire* content shown in Figure 2 was eliminated by the 1994 reform—and no analogous content was introduced. In particular, the post-reform textbooks make no mention of students' right to vote once they become citizens and includes no discussion of why voting is important. The various references to "elections" that appear in post-reform textbooks refer to descriptions of past contested elections, such as the election that brought dictator Porfirio Díaz to power. The new textbooks also state that Mexico continues to deal with several issues from the past, including contested elections. The only time that individual votes are mentioned is in the context of a discussion of President Francisco I. Madero's support of legitimate elections by protecting the power of voting.

Beyond emphasizing the importance of exercising the individual right to vote and drawing parallels between the structure of school activity commissions and the broader political system, the pre- reform textbooks present political parties as venues to process diverging opinions of the citizenry. In the post-reform history textbooks, these ideas are only mentioned superficially. Facts about the political system—including the existence of political parties and the historical absence of political competition, as well as cursory descriptions of the system of separation of powers and federalism—are included, but their underlying importance is not developed or emphasized.

In sum, both independent studies and my own quantitative and qualitative analysis of the content of textbooks find that, overall, the 1994 reform reduced the emphasis placed on teaching about democracy, the political rights and duties of citizens, and crucially, the importance of voting.

5 ANALYSIS OF HOW THE CURRICULUM REFORM AFFECTED THE LONG-TERM PROPENSITY TO VOTE

In this section I test the hypothesis that the Mexican curriculum reform of 1994, which reduced the importance given to teaching students about the importance and procedures of voting, led to a decline in voter turnout.

5.1 Data

To examine the role that the changes in the national curriculum had on long-run political behavior, I use administrative turnout data from the Mexican national electoral institute (Instituto Nacional Electoral, INE). These data were obtained through a special partnership with the INE and encompass the entire universe of registered voters in Mexico. Because the most commonly recognized national identification is issued by INE, a large majority of the adult Mexican population is registered to vote—the electoral roll included almost 90 million registered voters by 2018.[16]

The dataset records whether each registered citizen turned out to vote in the federal 2009, 2012, 2015, and 2018 elections. It also includes the electoral precinct assigned to each citizen, and basic demographic information including gender, date and state of birth, and self-reported level of education. In the main analyses, I use turnout in the 2018 election as our main dependent variable to minimize the amount of missing data. However, in the Online Appendix I show that the conclusions are robust to two alternative measures of the propensity to vote: (i) a binary variable indicating whether an individual voted in *any* federal election between 2009 and 2018 and (ii) a variable indicating the proportion of federal elections between 2009 and 2018 in which an individual voted.[17]

5.2 Motivational Evidence and Research Design

To estimate the effect of the national curriculum reform of 1994, I rely on a difference-in-differences framework that compares changes in turnout among cohorts of individuals with primary education before and after the reform vis-à-vis changes in turnout among cohorts that did not receive any formal education. I construct the main treatment and control groups based on the electoral roll's demographic information. I use the year of birth plus six as the eligible year to begin primary school for each cohort, which allows us to identify those voters that would have had the chance to be enrolled in primary school before and after the 1994 reform. Each birth cohort falls into one of three groups: those who would have had *no exposure* to the new curriculum because they completed primary education before the 1994 textbooks were distributed (i.e., individuals eligible to begin primary school in 1988 or before); those who, if attending primary education,

[16] In fact, because of the ongoing need to purge the roll from voters that are deceased, the total number of registered voters is slightly larger than the number of people 18 years or older according to the census.

[17] When computing these alternative measures, we rely on data from 2009, 2015, and 2018. We exclude the year 2012 because the INE could not confirm how we should code the data for that year.

would have been *partially* exposed to the new curriculum (i.e., individuals eligible to begin primary school between 1989 and 1993); and those who, if attending primary education, would have been *fully* exposed to the new curriculum (i.e., individuals eligible to begin primary school in 1994 or later). To improve upon a simple before/after reform comparison between cohorts that report having a primary education, I use those citizens that report not knowing how to read or write, in lieu of no formal education, as a control group. I refer to this group as having no primary education, though it may be the case that some of them remained illiterate even after receiving formal primary education. To focus attention on the primary curriculum specifically, I exclude from the sample those registered voters that report having higher levels of education, as changes in their political behavior may be affected by those higher degrees.[18]

Table 1 presents basic descriptives of the main outcome by cohorts around the 1994 reform, for those citizens that report primary education and those that do not. In Figure 3 illustrates the main findings.[19] First, citizens without primary education are, across cohorts, more likely to vote. This pattern may reflect mobilization efforts by political parties, who often target the least educated voters. Second, turnout declines for younger cohorts, which is consistent with voting patterns elsewhere. Third, this decline is observed among voters with and without primary education, and is parallel between these groups until 1988, after which it is more pronounced in the group of citizens with a primary education than it is among those without education.

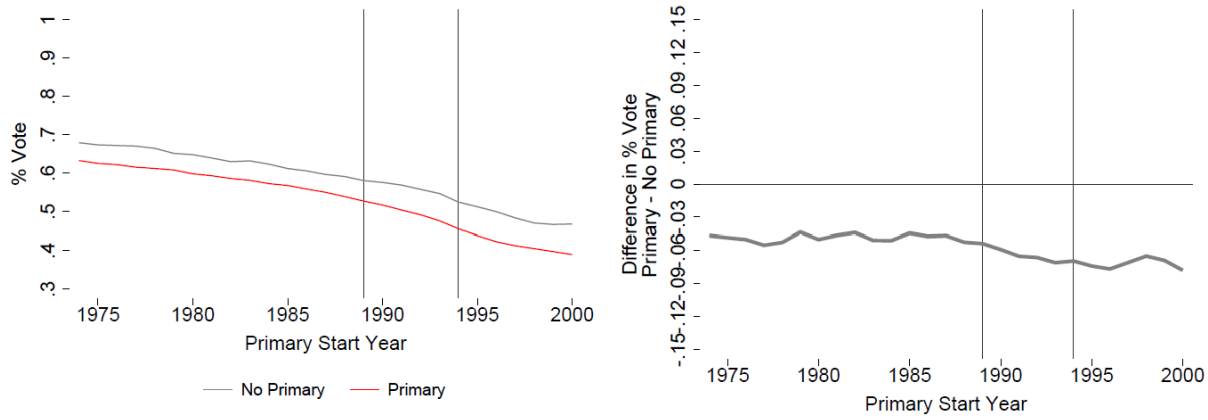
[18] I also exclude those citizens that report knowing how to read and write, which is included as one of the educational level options in the registration form. While this category could refer to citizens without formal education that would be appropriate to assign to the control group, it can also include citizens with higher levels of education that nonetheless choose this option.

[19] In the Appendix, I present versions of this table and figure using turnout in any of the 2009, 2015, and 2018 federal elections.

Table 1: Descriptive Statistics: Turnout in the 2018 Federal Election

	Citizens Without Primary Education								
	Pre-Reform (1980–1988)			Cohorts Partially Affected by Reform (1989–1993)			Post-Reform (1994–2000)		
	count	mean	sd	count	mean	sd	count	mean	sd
Vote in 2018 Election	456485	0.62	0.49	204060	0.57	0.50	202630	0.49	0.50
	Citizens With Primary Education								
	Pre-Reform (1980–1988)			Cohorts Partially Affected by Reform (1989–1993)			Post-Reform (1994–2000)		
	count	mean	sd	count	mean	sd	count	mean	sd
Vote in 2018 Election	2671073	0.57	0.49	1208201	0.50	0.50	1584920	0.42	0.49

Figure 3: Turnout in the 2018 Federal Election for Cohorts Before and After the 1994 Textbook Reform, by Primary Education



(a) Turnout

(b) Difference in Turnout (Primary - No Primary)

The right panel of Figure 3 helps to more clearly visualize this relative decline in turnout for cohorts affected by the 1994 curriculum reform. It presents, by cohort, the difference in the average turnout for registered voters with a primary education and the average turnout of citizens without a formal education. This difference is flat for cohorts that were too old to be affected by the reform. However, consistent with the idea that the reform led to lower political participation among citizens with primary education, relative turnout decreases for cohorts eligible to start primary school between 1989 and 1993, and

then remains at this new, lower difference for younger cohorts eligible to begin primary school in 1994 and later.

5.3 Main Panel Estimates

To more systematically examine the effect of the curriculum and textbook reforms of 1994 on long-term political behavior, I leverage variation in individuals' exposure to the new curriculum and textbooks both across and within birth cohorts. I compare turnout trends between affected and unaffected cohorts with primary school education to trends in non-educated cohorts using the following baseline specification:

$$(1)\quad Turnout_{i,t} = \beta_0 Primary_i + \beta_1 PartialReform_t x Primary_i + \beta_2 PostReform_t x Primary_i + \theta X_i + \lambda_t + \epsilon_{i,t}$$

$Turnout_{i,t}$ is an indicator for turnout in the 2018 federal elections for individual i of cohort t; $Primary_i$ is an indicator for whether individual i attended primary school; $PartialReform_t$ is an indicator for those cohorts that were eligible for primary school in the midst of the introduction of the new curricula/textbooks, so that they would have been exposed only during some years; $PostReform_t$ is an indicator for those cohorts that were eligible for primary school after the curriculum reform; X_i is a vector of individual-level covariates; λ_t are cohort-specific intercepts; and $\epsilon_{i,t}$ is an error term. Depending on the model, I cluster standard errors at the state-of-birth level, at the cohort level, and both.

Table 2 presents the estimates. Models 1–4, use all cohorts, and models 5–8 use only cohorts close to the 1994 reform. I build from a simple specification that only includes indicators for primary schooling and the post-1994 reform period (models 1 and 5) to models that add state-of-birth and cohort-specific intercepts (models 2–3 and 6–7) and models that also include electoral precinct fixed effects (models 4 and 8). These last set of indicators—one for each of the more than 68,000 precincts across Mexico—allow us to incorporate a host of unobservables related to the 2018 election, including local political competition. Across specifications and estimating samples, we find significant declines in average turnout for cohorts with primary education affected by the reform. The reform is estimated to reduce the probability of turning out to vote by almost 2 percentage points for those cohorts partially affected by the reform, and by around 3.5 percentage points for cohorts that completely receive the new post-1994 curriculum.

Table 2: Estimated Effect of the 1994 National Curriculum Reform on Long-Run Individual Turnout

	Turnout in the 2018 Federal Election							
	All Cohorts				Cohorts Around the '93 Reform (1980–2000)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post Reform (1994–)	-0.15***				-0.13***			
	(0.012)				(0.0097)			
Post Partial Reform (1989–1993)	-0.075***				-0.054***			
	(0.010)				(0.0080)			
Primary Education	-0.050***	-0.0089	-0.0089	-0.00063	-0.048**	-0.0090	-0.0090	-0.00059
	(0.016)	(0.0087)	(0.0085)	(0.0071)	(0.018)	(0.0093)	(0.0088)	(0.0072)
Post Partial Reform × Primary	-0.011	-0.019***	-0.019***	-0.021***	-0.014**	-0.017***	-0.017***	-0.019***
	(0.0073)	(0.0062)	(0.0051)	(0.0047)	(0.0060)	(0.0051)	(0.0034)	(0.0032)
Post Reform × Primary	-0.026***	-0.035***	-0.035***	-0.039***	-0.029***	-0.033***	-0.033***	-0.037***
	(0.0072)	(0.0073)	(0.0067)	(0.0059)	(0.0071)	(0.0071)	(0.0062)	(0.0053)
Electoral Section FE	No	No	No	Yes	No	No	No	Yes
State FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year-of-Birth FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Cluster State	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster Year-of-Birth	No	No	Yes	Yes	No	No	Yes	Yes
Mean of DV	0.55	0.55	0.55	0.55	0.52	0.52	0.52	0.52
SD of DV	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
R sq.	0.022	0.054	0.054	0.064	0.019	0.052	0.052	0.063
Observations	8405282	8405282	8405282	8405277	6322108	6322108	6322108	6322102

OLS estimations. The unit-of-analysis is the registered voter. Clustered standard errors in parentheses.
$^{*}p < 0.1,\ ^{**}p < 0.05,\ ^{***}p < 0.01$.

These estimates are substantively important — such implied effects of the curriculum reform on turnout are comparable in magnitude to observed margins of victory in a host of federal positions in the 2018 election. They are also somewhat larger but comparable to measured effects on turnout on interventions such as the disclosure of corruption (Chong et al. 2015; Larreguy, Marshall and Querubín 2018).

5.4 Analyses Exploiting State-Level Variation

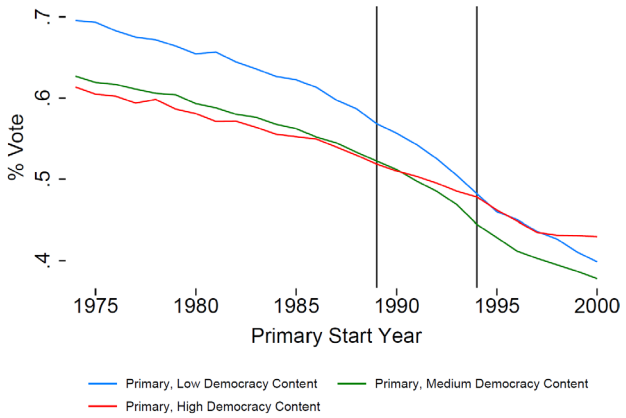
As an additional test, I take advantage of state-level variation in the curriculum introduced in 1994. I do not rely on this for the main analyses because, as noted earlier, the only textbooks for which there is variation across states are 3rd-grade History textbooks (and 3rd-grade children in all states also had to use the national History textbook distributed by the SEP). Therefore, the variation in the content of textbooks across states is quite small. However, if teachers in other grades also taught some of the content included in the 3rd-grade state-level History textbook, it is possible that the differences across states may have been sufficiently large so as to produce different political behavior outcomes.

I begin by computing the frequency of the following stems in each 3rd-grade state-level History textbook: "democra," "voto," "vota," "vote." The percentage of pages containing the stem "democra" ranges from 0.25% to 0.65% across these textbooks, and the percentage of pages containing the stems "voto," "vota," or "vote" ranges from 0.5% to 0.85%. Based on this variation, I classify states into the "Low," "Medium," and "High" amount of content related to democracy and elections.[20]

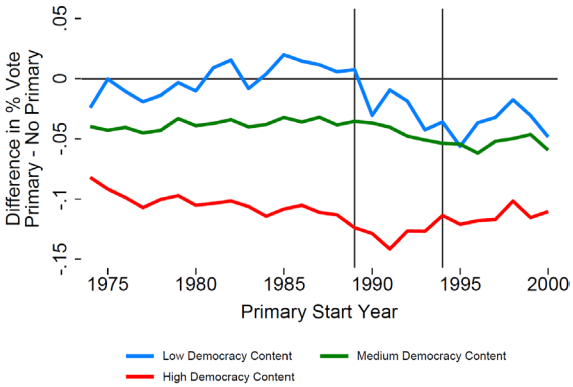
Figure 4 helps visualize the findings. The left panel shows the proportion of individuals with primary education from different cohorts who voted in the 2018 in states with a low (blue), medium (green) and high (red) amount of democracy- and voting-related content in the 3rd-grade state-level History textbooks. We can see that across the three groups of states have relatively parallel trends among cohorts who entered primary education prior to 1988. However, among cohorts partially or fully exposed to the new textbooks (i.e., who entered primary in 1989-93 or in 1994 or later) we observe that the largest decline in turnout occurs among those in low-dosage states, and the smallest decline occurs among those in high-dosage states. The right panel also takes into consideration how turnout evolved among those who did not have primary education. It presents, by cohort, the difference in the average turnout for registered voters with and without a primary education across the three groups of states. Again, we see that after the reform begins to shape the curriculum (i.e., for those who entered primary in 1989 or later), the biggest decline in turnout among cohorts with primary education relative to cohorts without formal education occurs among individuals of states where state-level textbooks included a low amount of democracy- and voting-related content.

[20] I also classified states into "Low," "Medium," and "High" groups using qualitative coding criteria. Specifically, I classified states into the "High" dosage group if their 3rd-grade History textbook both (i) discussed, in at least one sentence, why voting is important and (ii) contained a practical exercise to solidify the concepts learned about democracy and voting; "Low" if neither of these were present, and "Medium" if only one of these was present. Visual inspection based on this qualitative coding reveals very similar patterns to those shown in Figure 4, and the signs and magnitude of all coefficients are in the expected direction, but the results are not statistically significant.

Figure 4: Turnout in the 2018 Federal Election for Cohorts Before and After the 1994 Textbook Reform, by Primary Education and Dosage



(a) Turnout among Individuals with Primary Education by Dosage



(b) Different in Turnout (Primary – No Primary) by Dosage

For a more systematic assessment, we estimate the following model:

$$
\begin{aligned}
(1)\quad Turnout_{i,t} = {} & \beta_0 Primary_i + \beta_1 PartialReform_t x Primary_i + \beta_2 PostReform_t x Primary_i \\
& + \beta_3 Primary_i x MediumDosage_i + \beta_4 Primary_i x HighDosage_i \\
& + \beta_5 PartialReform_t x Primary_i x MediumDosage_i \\
& + \beta_6 PartialReform_t x Primary_i x HighDosage_i \\
& + \beta_7 PostReform_t x Primary_i x MediumDosage_i \\
& + \beta_8 PostReform_t x Primary_i x HighDosage_i + \theta X_i + \lambda_t + \epsilon_{i,t}
\end{aligned}
$$

where $Turnout_{i,t}$, $Primary_i$, $PartialReform_t$, and $PostReform_t$ are defined as before; X_i is a vector of individual-level covariates; λ_t are cohort-specific intercepts; $MediumDosage_i$ is an indicator for those states whose 3rd-grade History textbook contains a medium amount of content about democracy and elections; $HighDosage_i$ is an indicator for those states whose 3rd-grade History textbook contains a high amount of content related to democracy and elections; and $\epsilon_{i,t}$ is an error term. Again, depending on the model, we cluster standard errors at the state-of-birth level, at the cohort level, and both.

Table 3 presents the estimates. In models 1-4 we reproduce the results from models 5-8 presented in Table 2. In models 5-7 of Table 3 we report the results for equation 2. All models include state fixed and cohort effects. The simplest specifications (models 5-6) do

not include precinct fixed effects but differ in how we cluster standard errors. Model 7 includes precinct fixed effects and clusters standard errors at both the state-of-birth and cohort levels.

Table 3: Estimated Effect of the 1994 National Curriculum Reform on Long-Run Individual Turnout—Exploiting State-Level Variation in the Curriculum

	Vote						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Post Reform (1994–)	-0.13***						
	(0.0097)						
Post Partial Reform (1989–1993)	-0.054***						
	(0.0080)						
Primary Education	-0.048**	-0.0090	-0.0090	-0.00059	0.0073*	0.0073*	0.016***
	(0.018)	(0.0093)	(0.0088)	(0.0072)	(0.0038)	(0.0038)	(0.0046)
Post Partial Reform × Primary	-0.014**	-0.017***	-0.017***	-0.019***	-0.033***	-0.033***	-0.035***
	(0.0060)	(0.0051)	(0.0034)	(0.0032)	(0.0056)	(0.0065)	(0.0064)
Post Reform × Primary	-0.029***	-0.033***	-0.033***	-0.037***	-0.064***	-0.064***	-0.066***
	(0.0071)	(0.0071)	(0.0062)	(0.0053)	(0.0078)	(0.0073)	(0.0071)
Primary × Medium Exposure					-0.015	-0.015	-0.015
					(0.010)	(0.0097)	(0.0093)
Primary × High Exposure					-0.032	-0.032	-0.031
					(0.034)	(0.033)	(0.027)
Post Partial Reform × Primary × Medium Exposure					0.017***	0.017***	0.017***
					(0.0030)	(0.0027)	(0.0025)
Post Partial Reform × Primary × High Exposure					0.022	0.022	0.022
					(0.015)	(0.014)	(0.013)
Post Reform × Primary × Medium Exposure					0.031***	0.031***	0.029***
					(0.0056)	(0.0056)	(0.0059)
Post Reform × Primary × High Exposure					0.052*	0.052*	0.050*
					(0.028)	(0.027)	(0.025)
Electoral Section FE	No	No	No	Yes	No	No	Yes
State FE	No	Yes	Yes	Yes	Yes	Yes	Yes
Year-of-Birth FE	No	Yes	Yes	Yes	Yes	Yes	Yes
Cluster State	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster Year-of-Birth	No	No	Yes	Yes	No	Yes	Yes
Mean of DV	0.52	0.52	0.52	0.52	0.52	0.52	0.52
SD of DV	0.50	0.50	0.50	0.50	0.50	0.50	0.50
R sq.	0.019	0.052	0.052	0.063	0.052	0.052	0.063
Observations	6322108	6322108	6322108	6322102	6322108	6322108	6322102

Across specifications, we estimate that the reform reduced the probability of voting by around 6.5 percentage points in those states whose state-level textbooks included a low amount of democracy- and voting-related content. The decline in the propensity to vote was lower in states with a medium amount of democracy- and voting-related content, and more so, in states with a high amount. These estimates provide additional support for the initial hypothesis that the primary school curriculum shapes long-term political behavior, suggesting that the negative effect of the 1994 curriculum reform on turnout

was most (least) pronounced in those states where the student exposure to democracy- and voting-related content was the lowest (highest).

5.5 Implementation of the Reform

One possible concern about the results is the possibility that the reform was not well implemented. In principle, this could be because the new textbooks did not reach the schools, though this is unlikely given the SEP's decades-long machinery to distribute textbooks at the beginning of each school year. A more realistic possibility is that the reform was not perfectly implemented because, despite the textbooks being received by students, not all teachers used them. As discussed earlier, public school teachers for the most part were loyal to the PRI, but there was a small dissident group, and moreover, it is unclear to what extent private school teachers used the textbooks. A related concern about implementation is the possibility that the national textbooks were also used outside schools—for example, in community centers, adult learning institutions, churches, etc.—and reached individuals who did not attend primary school (the control group). Each of these would bias the estimates toward zero.

To examine the implementation of the reform, we collected survey data from a representative sample in one state of Mexico (Oaxaca). For each respondent, we gathered information about their date of birth, educational attainment, and whether they attended a public or private primary school. We also showed respondents three different sets of textbook covers: one set contained covers from four pre-reform textbooks (from different grades); another set showed covers from four post-reform textbooks; and the third set showed covers from four Chilean textbooks. The order in which sets were presented was randomized.

The survey reveals three main findings presented in the Online Appendix. First, across cohorts who began primary school after 1960, but not before, the self-reported use of national primary school textbooks is very high among individuals who attended primary education and very low among individuals who have no formal education, suggesting the textbooks reached primarily those individuals with formal education and not others. Second, individuals with primary education who began school after 1988 and therefore should have been either partially or fully exposed to the new curriculum indeed report a higher rate of exposure to the new textbooks than individuals who completed primary school before the new textbooks were introduced. Third, treated individuals report having used the new textbooks at a higher rate than they report having used the old ones.

Fourth, there is no difference in recall rates among individuals who attended public vs. private primary schools. Fifth, recall rates for Chilean textbooks is lower than for new and old textbooks, and there is no difference in recall rates for these books before and after the 1994 reform. Taken together, these findings provide evidence that the textbooks did reach the groups they were supposed to reach at a higher than they reached then groups they were not supposed to reach.

5.6 Other Changes in 1994

Another concern is the possibility that the findings may be driven not by the 1994 curriculum reform but by other changes that coincided with. For example, it is possible that the PRI, due to concerns about its lack of popularity after the 1988 presidential election, used various strategies—not just education—to reduce the regime's past emphasis on encouraging everyone to vote. These other strategies, and the temporal coincidence with any other changes that occurred in 1994, are not a concern for our identification strategy as long as we believe that individuals with and without primary education were similarly affected by them. Two specific potential threats deserve greater attention, and we examine each in turn.

5.6.1 Expansion of secondary education. As noted earlier, in 1993 the government extended the number of years of compulsory schooling to include not only primary but also secondary education. A potential concern is that this reform induced a change in the composition of individuals who only received primary education (the treated group) that is responsible for the findings. This would be the case if those individuals who would have only attended primary school under the old compulsory schooling law, but who attended secondary school under the new compulsory schooling law, were more likely to vote. If this occurred, removing these individuals from the treated group would mechanically produce a decline in turnout rates.

To assess this possibility, we estimated whether the reform induced any compositional changes. Our ability to conduct this exercise is admittedly constrained by the set of observable individual-level characteristics included in the INE's dataset. However, there are two variables we can take advantage of: gender (coded as male/ female) and occupation (coded as household worker, ejidatario, white-collar employee, blue-collar worker, farm worker, public-sector employee, professional, business owner, self-

employed, student, unemployed, or other occupation).[21] For each, we re-estimate equations 1 and 2, but this time we use these observable characteristics instead of using turnout as the dependent variables.

The results, presented in the Online Appendix, suggest that the earlier findings are unlikely to be driven by compositional changes. First, for most variables (ejidatario, blue-collar worker, farm worker, public-sector employee, professional, business owner, and student) the reform induced either no compositional changes (i.e., precisely estimated zeros), no significant effect on their proportion, or very small changes. Second, the largest compositional changes induced by the reform—a 3.1% increase in the proportion of women, a 6.2% increase in the proportion of household workers, and a 1.9% increase in the proportion of self-employed individuals—are likely to bias the results against my hypothesis, because the reform induced increases in the proportion of characteristics associated with higher, not lower, turnout rates (women and household workers) and reductions in the proportion of characteristics associated with lower turnout rates (self-employed).

The next step is to use census data to explore whether the reform had additional compositional effects besides those we can detect with the INE dataset.

5.6.2 The Zapatista movement. Another event that occurred in January 1994 was the twelve-day Zapatista uprising—led by the far-left Zapatista Army of National Liberation (EZLN)—in which rebels demanded justice and recognition for the rights of indigenous groups and poor people. Despite being confined territorially primarily to the state of Chiapas, the uprising received widespread national and international attention. In principle, it is possible that the Zapatista uprising, more so than the curriculum reform we study, impacted long-term political behavior.

To assess whether the Zapatista rebellion explains the findings, I re-estimate equation 1 but with a new dependent variable: whether or not an individual speaks an indigenous language at home. If the Zapatista rebellion succeeded in shaping long-term political behavior, we would expect to see an increase in individuals' identification with an indigenous group—which we measure here using self-reported data from the 2015

[21] Gender is a pre-treatment characteristic. However, occupation could be interpreted as a post-treatment variable that is affected by the curriculum reform. Therefore, the results for this variable should be interpreted with more caution. Nonetheless, to the extent that schools reproduce existing social inequalities, an individual's occupation can be interpreted as a proxy for the socioeconomic background in which they grew up (i.e., a pre-treatment variable).

Census on the language spoken at home. However, if the curriculum played a more important role in shaping long-term political behavior, we would expect to see no or small effects on individuals' identification with an indigenous group because the pre- and post-1994 textbooks did not differ in the emphasis they placed on teaching about indigenous customs and traditions or indigenous groups' history and contributions to Mexican society.

The results of this exercise, presented in Table 4, provide additional support for our hypotheses. They show small effects after 1994 once we control for time-invariant state characteristics, which become even smaller and lose statistical significance when we cluster standard errors by state and year-of birth and/or when we include precinct fixed effects.

Table 4: Estimated Effect of the 1994 National Curriculum Reform on Long-Run Individual Turnout

	Self-Declared Indigenous Language			
	(1)	(2)	(3)	(4)
Post Reform (1994–)	-0.0080			
	(0.016)			
Post Partial Reform (1989–1993)	0.012			
	(0.0082)			
Primary Education	-0.17***	-0.12***	-0.12***	-0.10***
	(0.033)	(0.023)	(0.024)	(0.020)
Post Partial Reform × Primary	-0.0055	-0.0063	-0.0063	-0.010
	(0.0074)	(0.0049)	(0.012)	(0.011)
Post Reform × Primary	0.028*	0.018*	0.018	0.0093
	(0.015)	(0.0093)	(0.013)	(0.011)
Locality Size FE	No	No	No	Yes
State FE	No	Yes	Yes	Yes
Year-of-Birth FE	No	Yes	Yes	Yes
Cluster State	Yes	Yes	Yes	Yes
Cluster Year-of-Birth	No	No	Yes	Yes
Mean of DV	0.12	0.12	0.12	0.12
SD of DV	0.32	0.32	0.32	0.32
R sq.	0.040	0.22	0.22	0.25
Observations	1301932	1301932	1301932	1301932

OLS estimations. The unit-of-analysis is the registered voter. Clustered standard errors in parentheses. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Taken together with the previous findings, the results suggest that the 1994 curriculum reform impacted those political behaviors where we would expect to see changes based on the curriculum reform (i.e., voter turnout), and did little to affect behaviors where we would not expect to see changes based on curriculum reform (i.e., indigenous language)

despite the co-occurrence of other major shocks that in principle could have affected these behaviors.

CONCLUSION

In this paper, we examine changes in the way mandatory and uniform textbooks in Mexico taught democratic values, as part of a curriculum reform in 1994. We find that, while the reform did not reduce the prevalence of topics related to citizenship, political participation and democracy, it noticeably changed the way these ideas were taught. The emphasis shifted from the development of arguments about the importance of political engagement, including electoral participation, to mere recitations of procedural facts.

After documenting these changes, we measure the impact of the reform on political participation over the long term. Using administrative individual-level turnout data for the universe of registered voters in Mexico, we compare changes in turnout among cohorts with a primary education before and after the reform tto changes in turnout in cohorts without a formal education. For cohorts that were eligible to begin primary school prior to the reform turnout is parallel between educated and uneducated groups. After the reform, however, educated citizens see a relative decline in turnout. We quantify this reduction in the probability of voting to be of almost 2 percentage points for those partially affected by the curriculum changes and of around 3.5 percentage points for those completely affected by them.

The results offer an explanation for the puzzling evidence—emerging from a growing literature—that additional years of schooling sometimes increase, and other times decrease, individual political participation. The findings suggest that the content of education that children are exposed to is potentially as consequential as the number of years spent in school. For the case of Mexico, we provide evidence that a curriculum reform that lowered the importance given to voting decreased turnout among those who went to school relative to those who did not. In these circumstances, additional years of schooling could plausibly have a negative impact on political participation.

More broadly, I hope that this study highlights the promise of moving away from years of schooling when studying the political consequences of education to incorporate the role of the content of education. Going back to Hobbes and Rousseau, political philosophers — and the politicians influenced by their ideas — have argued that children are especially susceptible to external influence and the inculcation of specific values and behaviors. Not surprisingly, throughout history the most heated political debates in

education have centered around what content, and especially what values, should be taught in schools. The study provides evidence that the curriculum does indeed matter for long-term political participation. Education can promote democracy if schools teach democratic attitudes and behaviors, but this is not always so.

REFERENCES

Abbott, Jared A., Hillel David Soifer, and Matthias Vom Hau. 2017. "Transforming the Nation? The Bolivarian Education Reform in Venezuela." *Journal of Latin American Studies* 49(4): 885-916.

Aboites Aguilar, Luis. 2003. *Excepciones y privilegios: Modernización tributaria y centralización en México, 1922-1972*. El Colegio de México.

Almond, Gabriel and Sidney Verba. 1962. *The Civic Culture: Political Attitudes and Democracy in Five Nations*. Princeton University Press.

Arnaud, Alberto. 1994. "La federalización de la educación básica y normal (1978-1994)." *Política y Gobierno* 1(2): 237-274.

Bartels, Larry M. and Simon Jackman. 2014. "A Generational Model of Political Learning." *Electoral Studies* 33:7–18.

Bazzi, Samuel, Masyhur Hilmy, and Benjamin Marx. 2023. "Religion, education, and development." National Bureau of Economic Research.

Berinsky, Adam and Gabriel Lenz. 2011. "Education and Political Participation: Exploring the Causal Link." *Political Behavior* 33(3):357–373.

Bold, Tessa, Deon Filmer, Gayle Martin, Ezequiel Molina, Brian Stacy, Christophe Rockmore, Jakob Svensson, and Waly Wane. 2017. "Enrollment without learning: Teacher effort, knowledge, and skill in primary schools in Africa." *Journal of Economic Perspectives* 31(4): 185-204.

Bold, Tessa, Mwangi Kimenyi, Germano Mwabu, and Justin Sandefur. 2018. "Experimental evidence on scaling up education reforms in Kenya." *Journal of Public Economics* 168: 1-20.

Bowles, Samuel and Herbert Gintis. 1976. *Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life*. Basic Books.

Campbell, David. 2019. "What Social Scientists Have Learned About Civic Education: A Review of the Literature." *Peabody Journal of Education* 94(1).

Cantoni, Davide, Yuyu Chen, David Y. Yang, Noam Yuchtman and Y. Jane Zhang. 2017. "Curriculum and ideology." *Journal of Political Economy* 125(2):338–392.

Cantú, Francisco. 2019. "The fingerprints of fraud: Evidence from Mexico's 1988 presidential election." *American Political Science Review* 113(3): 710-726.

Celis García, Zaida María. 2018. *Democracia y educación ciudadana en México: los libros de texto gratuitos*. PhD thesis Universitat de Barcelona.

Chen, Wei-Lin, Ming-Jen Lin, and Tzu-Ting Yang. 2023. "Curriculum and national identity: Evidence from the 1997 curriculum reform in Taiwan." *Journal of Development Economics* 163.

Chong, Alberto, Ana L. De La O, Dean Karlan and Leonard Wantchekon. 2015. "Does Corruption Information Inspire the Fight or Quash the Hope? A Field Experiment in Mexico on Voter Turnout, Choice, and Party Identification." *The Journal of Politics* 77(1):55–71.

Clots-Figueras, Irma, and Paolo Masella. 2013. "Education, language and identity." *The Economic Journal* 123(570): F332-F357.

Croke, Kevin, Guy Grossman, Horacio Larreguy and John Marshall. 2016. "Deliberate Disengagement: How Education Can Decrease Political Participation in Electoral Authoritarian Regimes." *American Political Science Review* 110(3):579–600.

Darden, Keith, and Anna Grzymala-Busse. 2006. "The great divide: Literacy, nationalism, and the communist collapse." *World Politics* 59(1): 83-115.

Darden, Keith, and Harris Mylonas. 2016. "Threats to territorial integrity, national mass schooling, and linguistic commonality." *Comparative Political Studies* 49(11): 1446-1479.

Dee, Thomas S. 2004. "Are there Civic Returns to Education?" *Journal of Public Economics* 88(9–10):1697– 1720.

Dewey, John. 1916. *Democracy and Education. An Introduction to the Philosophy of Education*. Macmillan Company.

Fouka, Vasiliki. 2020. "Backlash: The unintended effects of language prohibition in US schools after World War I." *The Review of Economic Studies* 87(1): 204-239.

Freire, Paulo. 1970. *Pedagogy of the Oppressed*. Continuum.

Friedman, Willa, Michael Kremer, Edward Miguel and Rebecca Thornton. 2016. "Education as Liberation?" *Economica* 83(329):1–30.

Gvirtz, Silvina. 1999. "La politización de los contenidos escolares y la respuesta de los docentes primarios en los primeros gobiernos de Perón—Argentina 1949-1955." *Estudios Interdisciplinarios de América Latina y el Caribe* 10(1).

Heckman, James. 2000. "Policies to Foster Human Capital." *Research in Economics* 54(1):3–56.

Holbein, John. 2017. "Childhood Skill Development and Adult Political Participation." *American Political Science Review* 111(3):572–583.

Kam, Cindy D. and Carl L. Palmer. 2008. "Reconsidering the Effects of Education on Political Participation." *The Journal of Politics* 70(3):612–631.

Kuran, Timur. 1991. "Now out of never: The element of surprise in the East European revolution of 1989." *World Politics* 44(1): 7-48.

Larreguy, Horacio and John Marshall. 2017. "The Effect of Education on Civic and Political Engagement in Nonconsolidated Democracies: Evidence from Nigeria." *The Review of Economic and Statistics* 99(3):387-401.

Larreguy, Horacio, John Marshall and Pablo Querubin. 2018. "Priors Rule: When do Malfeasance Revelations Help and Hurt Incumbent Parties?" NBER Working Paper 24888 .

Latapí Sarre, Pablo. 2004. *La SEP por dentro*. Fondo De Cultura Económica.

Levinson, Meira. 1999. *The Demands of Liberal Education*. Oxford University Press.

Levitsky, Steven and Daniel Ziblatt. 2018. *How Democracies Die*. Broadway Books.

Lipset, Seymour. 1960. *Political Man; the Social Bases of Politics*. Doubleday.

Magaloni, Beatriz. 2006. *Voting for autocracy: Hegemonic party survival and its demise in Mexico*. Cambridge: Cambridge University Press.

Milligan, Kevin, Enrico Moretti and Philip Oreopoulos. 2004. "Does Education Improve Citizenship? Evidence from the United States and the United Kingdom." *Journal of Public Economics* 88(9–10):1667–1695.

Murillo, María Victoria. 1999. "Recovering political dynamics: Teachers' unions and the decentralization of education in Argentina and Mexico." *Journal of Interamerican Studies and World Affairs* 41(1): 31-57.

Neundorf, Anja, Richard G. Niemi and Kaat Smets. 2016. "The Compensation Effect of Civic Education on Political Engagement: How Civics Classes Make Up for Missing Parental Socialization." *Political Behavior* 38(4):921–949.

Neundorf, Anja, Eugenia Nazrullaeva, Ksenia Northmore-Ball, Katerina Tertytchnaya, Wooseok Kim, Aaron Benavot, Patricia Bromley, Carl Henrik Knutsen, Philipp Lutscher, Kyle Marquardt, Agustina Paglayan, Dan Pemstein, Brigitte Seim, and Oskar Rydén. 2023. "Varieties of Political Indoctrination in Education and the Media (V-Indoc) Dataset V1." DEMED Project. https://dx.doi.org/10.5525/gla.researchdata.1397

Paglayan, Agustina. 2021. "The Non-Democratic Roots of Mass Education: Evidence from 200 Years." *American Political Science Review* 115(1):179-198.

Paglayan, Agustina. 2022. "Education or Indoctrination? The Violent Origins of Public School Systems in an Era of State-Building." *American Political Science Review* 116(4):1242-1257.

Phillips, Deborah A. and Jack P. Shonkoff, eds. 2000. *From Neurons to Neighborhoods: The Science of Early Childhood Development*. National Academies Press.

Putnam, Robert. 1995. "Bowling Alone: America's Declining Social Capital." *Journal of Democracy* 6(1):65–78.

Rousseau, Jean-Jacques. 1755. *Political Economy*. Available Online: https://quod.lib.umich.edu/ d/did/did2222.0000.121/--political-economy-abridged?rgn=main;view=fulltext;q1= Ethics.

Solana, Fernando, Raúl Cardiel Reyes, and Raúl Bolaños Martínez (eds.). 1981. *Historia de la educación pública en México*. Fondo de Cultura Económica.

Sondheimer, Rachel and Donald Green. 2010. "Using Experiments to Estimate the Effects of Education on Voter Turnout." *American Journal of Political Science* 41(1):178–189.

Tenn, Steven. 2007. "The Effect of Education on Voter Turnout." *Political Analysis* 15(4):446–464.

Toloudis, Nicholas. 2012. *Teaching Marianne and Uncle Sam: Public education, state centralization, and teacher unionism in France and the United States*. Temple University Press.

Vargas Escobar, Natalia. 2011. "La historia de México en los libros de texto gratuito: evidencia de las transformaciones en los modelos de integración nacional." *Revista Mexicana de Investigación Educativa* 16(49):489–523.

Vaughan, Mary Kay. 1975. "Education and class in the Mexican Revolution." *Latin American Perspectives* 2(2): 17-33.

Vaughan, Mary Kay. 1982. *The State, Education, and Social Class in Mexico, 1880-1928*. Northern Illinois University Press.

Villa Lever, Lorenza. 2009. *Cincuenta años de la Comisión Nacional de Libros de Texto Gratuitos: cambios y permanencias en la educación mexicana*. Conaliteg.

Wantchekon, Leonard, Marko Klasnja and Natalija Novta. 2015. "Education and Human Capital Externalities: Evidence from Colonial Benin." *Quarterly Journal of Political Science* 130(2):703–757.