

Chapter 5

Education Truly Matters: Key Lessons from Mexico's Educational Reform for Educating the Whole Child



Elisa Bonilla-Rius

Abstract Mexico's 2012–2018 federal administration launched an extensive educational reform whose main goal was to transform its large and complex education system, so as to prepare students to successfully face twenty first century challenges. The assumption being that, by providing them with the tools they need to succeed in this rapidly changing world, Mexico will in turn become prosperous, fair and free. It entailed rethinking the conceptualization and structure of the system, and involved profound transformations in its organizational, budgetary, technical, pedagogical and administrative spheres, with quality and equity as guiding principles. Two disruptive innovations –which steered the process– stand out: teachers' appraisals and the new national curriculum. About this curriculum, three, of several salient features, discussed in this chapter, are: its learning outcomes' structure, which effectively articulate twelve of the fifteen grades of compulsory education; the introduction, from PreK to 12th grade, of socioemotional learning; and curricular autonomy as a means to achieving pedagogical innovations in schools. Unfortunately, this reform defied deeply rooted uses and habits of various stakeholders and treaded on many political interests, which resulted in a convoluted process that has threatened its consolidation. The new president campaigned against the reform. It is still uncertain what policies would continue.

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E. Bonilla-Rius (✉)

Antonio Madero Visiting Scholar, David Rockefeller Center for Latin American Studies,
Harvard University, Cambridge, MA, USA

5.1 Introduction

We are at the dawn of the fourth industrial revolution. In ten or fifteen years, robots and artificial intelligence will have decimated not only the little that is left of the industrial proletariat, but also a large part of today's desk jobs. Education will be necessary for cooking, for driving, for employment and for unemployment, for politics and for inventing new ways of living. The Mexico that I want is a country where there is one broad consensus: that *education truly matters*.¹ Lomnitz (2018)

With a new paradigm for the provision of education services by the state, Mexico's recent educational reform – the most important since 1959, when the so-called *Eleven Years Plan*² to universalize primary education was launched– signified a turning point in the conceptualization and structure of the country's education system. Involving profound transformations in its organizational, budgetary, technical, pedagogical and administrative spheres, with quality and equity as its guiding principles. Bringing about this transformation has been a convoluted process. However, it is a critical priority if Mexico is to allow children and young people to successfully participate and compete in the global knowledge society.

This chapter was written between January and June 2019, just after the federal administration that promoted the reform had ended. It is organized in eight sections. After this introduction, Sect. 5.2 describes the contextual factors that called for the reform agenda: the complex nature of the Mexican education system and its anomalous practices, students' unsatisfactory education outcomes, and teachers' individual and institutional challenges. Section 5.3 outlines the five key components of the New Educational Model –the core document of the reform– which was the blueprint for this performance-based reform. Section 5.4, entitled “The New National Curriculum (PreK-9)”, describes the educational goals of the reform and how are they related to twenty first century skills. With the aid of cardinal documents aimed at disseminating the syllabi amongst teachers, it explains the organization of the curriculum for educating the *whole child* and the breadth of skills covered by it, as well as its pedagogical principles and some innovations, such as the introduction of socio-emotional learning and schools' curricular autonomy. Section 5.5 explains the various implementation stages as well as the role of some key stakeholders. Section 5.6 analyzes the politics of the reform. It discusses the political agreement that was needed to bring about this ambitious transformation, the support it summoned, and the resistance that arose from some groups and regions of the country. Section 5.7 looks at the reform's impact. Although it is rather early to properly evaluate the expected systemic changes, there are interesting achievements –supported by studies and surveys conducted by independent bodies and individuals– that deserve to be examined. The last section (Sect. 5.8) highlights some of the important challenges, as have been put forward by various authors.

¹ This quote was originally published in Spanish and translated by E. Bonilla-Rius.

² For further information, see Latapí (1992) and Granados (2018b).

In addition to my personal experience with the reform, I have also relied on various sources for writing this chapter, ranging from legal and official documents, research articles, newspaper and opinion pieces, written both by educators and political commentators, as well as informative texts published for teachers by Mexico's Ministry of Education (SEP).

5.2 The Context at the Outset of the Reform

Some of the most important contextual factors at play at the end of 2012, when the educational reform was launched, were the size of the education system, its' inequalities, and complexity, in addition to its' verticality, bureaucracy and dated practices, resulting in poor student learning outcomes. As Nuño³ (2018) explained: Our education system did not evolve at the required speed. Despite very important efforts such as increasing enrollment at all levels, expanding technological education and the 1992 decentralization process, the system continued to have a structure that, in many aspects, responded better to the *old regime*: a hegemonic party, a closed economy with vertical and bureaucratic structures, that discouraged innovation and creativity in schools. Acute inequalities persisted in the system.

5.2.1 The Structure and Governance of the Education System

Mexico is a highly populated country, with over 119.5 million people (INEGI 2015), where almost half (45%) are under 25 years old. Mexico's education system is the ninth largest of the world, with 36.4 million students, two million teachers, and almost 260 thousand schools (K-12). SEP leads the system and is responsible for designing all its major policies including the national (PreK-9) curriculum. However, in 1992, the actual management of schools was decentralized to Mexico's 32 federal states.⁴ The system caters to the educational needs of a large and highly diverse population: 21% of all pupils live in rural areas; 3% of students speak one of the 64 indigenous languages and are educated both in their mother tongue and in Spanish. 43% of all primary schools are multi-grade, but they service only 4.6% of total primary students, which means that they are rather small, often located in remote areas and many suffer from numerous structural shortcomings SEP (2018b).

The Mexican education system is not only large, but also quite complex. Created in the second decade of the twentieth century, it maintains its original highly vertical and centralized design. With the decentralization of schools and teachers to the

³During president Peña-Nieto's administration (December 2012 – November 2018), three ministers of education were in office: Emilio Chuayffet, (December 2012–August 2015), Aurelio Nuño, (August 2015–December 2017) and Otto Granados, (December 2017–November 2018).

⁴With the only exception of Mexico City which is still managed centrally by SEP.

states almost 30 years ago,⁵ its verticality has slowly started to diminish, but many of the original political and administrative arrangements are still in force and they can be a real hindrance to the type of evolution that the education system needs to undertake.

Several authors (among others: Fuentes-Molinar 2013; Ramírez-Raymundo 2013; Moe 2017; Chambers-Ju and Finger 2017) have studied how, over several decades, the state's authority in education was gradually, but effectively, compromised by the yielding of power to the National Teachers' Union (SNTE)⁶ which resulted in SNTE's involvement in several spheres of the system. This process, a *de facto* shared governance by the education authorities (federal and local) and the union, reached its peak in 2006, when a prominent member of SNTE was appointed to high office in SEP, as Under Secretary of State for Basic Education. The union's interference throughout the years distorted the social relations among education stakeholders, which in turn gave rise to severe aberrations within the system. The absence of accountability stands out among such irregularities. For instance, at the beginning of the reform, SEP lacked reliable statistical information, like the exact number of schools and teachers, which was vital for developing the reform policies and not least for running the country's education system. This lack of transparency had long been covertly promoted by the union, because it served its *patrimonial power*,⁷ as a means to take advantage of the education budget and its political patronage. Hence, in December 2012 at the outset of the reform, a census (INEGI 2014) was conducted to accurately detail how many schools, teachers, and students truly existed within Mexico's public education system. Among other things, it was suspected there were thousands of *phantom* teachers and other irregularities on the payroll, which was later confirmed and corrected (SEP 2017c).

⁵ Several experts have dealt with the benefits and shortcomings of this process of decentralization (or "federalization" as it has been labelled) but it is far from perfect. Ornelas (2003) has indicated that: "It certainly represents the alternative to bureaucratic centralism - at least it is not worse - and it offers the potential to grant legitimacy to the governments that seek it, although some resist losing degrees of control". Mancera (2010) explains how it affected the education budget.

⁶ SNTE is Mexico's largest trade union (with over 1.6 million members) and it is often said that it is also Latin America's largest. It controls 31 out of 32 states, over 80% of total teachers' pay-roll. The only exception is the Union of Teachers of the State of Mexico, which is the most influential organization in that particular state, which is Mexico's most populated. The Committee of Education Workers (CNTE), the self-proclaimed "democratic" faction of SNTE, controls four states: Oaxaca, Chiapas, Guerrero and Michoacán and has a sparser presence in the rest of the country. There are other much smaller organizations, but their nature is local, and they do not have relevant political clout. (Fuentes-Molinar 2013)

⁷ "Patrimonial power", is –in Max Weber's sense– a traditional form of domination in which a leader, who is not constrained by legal-rational rules, uses his power to serve personal ends. Weber (1968) as quoted by Chambers-Ju and Finger (2017). Such power originated in the corporatist ties that formed between SNTE and PRI (Mexico's ruling party for 70 continuous years). By the 2012 presidential election, PRI had not ruled for the last 12 years and SNTE did not backed PRI, President Peña-Nieto's party. Hence, those ties were no longer extant. An advantageous situation that benefited the reform.

Another widely spread anomaly, which has also been well researched (Moe 2017; Chambers-Ju and Finger 2017), is SNTE's participation in the allocation and promotion of teaching appointments. For decades, the union had leeway to hire new teachers and to be heavily involved in the advancement of teachers to higher positions. In their hands, teaching positions became expensive goods from which the union and its leaders greatly profited, financially and politically, over the years. The opacity of appointing and promoting teachers resulted in vicious and dishonest practices, like selling, renting and inheriting teaching positions. Before teachers' jobs were allocated through a competitive evaluation process introduced by the reform, the price of a teaching position in the *black-market* fluctuated, depending on rank and location, between \$100,000 and \$600,000 Mexican pesos, equivalent to \$5000 to \$30,000 US dollars.⁸ Thus, for years, the selection and promotion criteria of teachers and other positions within the system were not based on merit but on cronyism. Many teachers and principals were hired and promoted not based on quality of their teaching or competency for the job, but rather on their compliance with union political requests.

Chronic teacher absenteeism was an additional dismal result of SNTE controlling teacher' jobs, which greatly impacted the quality of education. The 2012 census data analysis detected 13% of teacher payroll (298,000 teachers) as not showing up for work (INEGI 2014; *The Economist* 2014). Before the reform, SNTE had an army of teachers working fulltime for the union, but they were being paid by the state, through the schools' payroll where they were allegedly based. With the reform, the union had to start paying such salaries and therefore many teachers returned to their teaching posts.⁹

All these negative practices had abysmal consequences for the quality of students' education. Thus, the reform needed to address head on the union's political clout as well as the great number of irregularities the system had accumulated over the years. Hence, it was vital for the state to break the *de facto* shared governance and regain full control of the education system. It was a cumbersome process, many interests were crushed, and, in the regions where the National Committee of Education Workers (CNTE) –a radical faction within SNTE– controls the teachers' union, the educational reform advanced at a different rate or not at all, as a result of CNTE's opposition to the reform.¹⁰

⁸Speaking about the reform at a public lecture, Otto Granados –the third education minister during the reform– publicly revealed these figures and said that the decisions made within the national education system were “captured by the arrangements with SNTE”. These statements were widely reported in the media: <https://www.debate.com.mx/mexico/Plazas-de-maestros-se-vendian-hasta-en-600-mil-pesos-SEP-20180220-0374.html> (last accessed on 26 February 2019).

⁹In order to solve the massive leak of resources from the federalized education payroll, in 2014, Congress passed the presidential initiative to centralize teachers' salaries through the Contribution Fund for Educational Payroll and Operational Expenditure (FONE). (Fernandez and Herrera 2018).

¹⁰In particular, four states: Oaxaca, Michoacán, Guerrero and Chiapas are Mexico's most rural states and with larger indigenous populations.

5.2.2 *Mexico's National and International Education Outcomes*

Mexico's learning outcomes, both on national and international tests, are less than satisfactory. At the national level, students have performed poorly on the various standardized tests that have been in place since the 1990s. PLANEA¹¹ was introduced during the reform to assess ninth grade students' performance in Spanish and Mathematics. It was administered by the National Institute for the Evaluation of Education (INEE) twice, in 2015 and in 2017, and the results were similar both times.

In the 2017 survey: 64% of students scored in the lowest performance level (level I) in Mathematics, meaning that more than six out of ten students leave lower secondary school with some arithmetic knowledge but no algebraic skills. In Spanish, 34% of all students also scored at the lowest performance level, indicating they have great difficulty comprehending and interpreting texts of medium complexity, like a daily newspaper. This suggests they will have great difficulty pursuing further studies or even finding a job that is not manual.

In contrast, at level IV, with outstanding performance, there are comparatively much less students. In Spanish, only 8% can analyze and rank in order of importance complex arguments, so as to evaluate implicit and explicit information contained in different parts of complex literary, non-fictional and argumentative texts. In Mathematics, as few as 5% can solve problems that entail the combination of fractions and decimals and as well as problems using equations to find unknown values.

In Spanish, a large number of students (40%) are at the basic level (level II). This means that they can distinguish between the structure of fictional and non-fictional texts as well as being able to make simple inferences, but only about explicit information contained in them. Their interpretative abilities are slowly starting to develop, which means that they will also encounter great academic difficulties ahead. In Mathematics (level II) there are 22% of students, which means they are able to solve problems that entail the addition, subtraction, multiplication and division of decimals. They are also able to use letters as variables to construct simple numerical relations with an unknown value. These students, however, are also likely to struggle with many of the academic challenges ahead of them.

These results also raise important issues regarding equity. For instance, in Spanish, the national mean score is 495, however in urban schools it is 507, whereas in rural schools it is 452. In Mathematics the national mean score is 497, with 503 in urban schools and 475 in rural schools. There are also very significant differences in student performance based on social background, especially parents' educational

¹¹ PLANEA is a standardized test administered to primary, secondary and high-school students. More about the 2017 test for ninth graders in: http://planea.sep.gob.mx/content/general/docs/2017/RESULTADOS_NACIONALES_PLANEA2017.pdf (last accessed on 26 October 2018).

attainment. The less educated the parents are, the more disadvantaged the students. Children of illiterate parents,¹² have a mean score of 398 in Spanish and 413 in Mathematics. Students whose parents only completed primary school have a mean score of 442 in Spanish and 460 in Mathematics. Those students whose parents have a university degree, tend to be top performers, with mean scores of 559 in Spanish and 555 in Mathematics.

At the international level, Mexican students have also performed poorly. Of the 65 countries who took the 2012 PISA assessment, Mexico was in 53rd place. In PISA 2015, Mexico was in 58th place out of 72 countries, with Mexican students scoring below the OECD average, with only 416 points in science, 423 in reading and 408 in mathematics. In all three domains, less than 1% of students were top performers. In fact, around one in two students (47.8% in science, 56.6% in mathematics and 41.7% in reading) are below the minimum competency level necessary to access higher education or perform well in activities that entail finding solutions to complex social and environmental problems. At the present time, when science literacy is increasingly linked to economic growth, it is necessary for all citizens, not just future scientists and engineers, to be willing and able to confront science-related dilemmas, (OECD 2018b). However, the average science performance of 15-year-old students in Mexico has not changed significantly since 2006, when science was the main domain assessed. Also, in reading, the average student performance has remained stable since 2009. In contrast, Mathematics performance has, on average, improved by five score points every 3 years between 2003 and 2015, but still remains low in comparison to other OECD countries. Mean PISA performance in Mexico is also above the mean of other Latin American countries: eight points in science, 17 in mathematics and six in reading.

Since one of the reform's main goal was to ensure school leavers would have a better and more prosperous future, these poor academic results became an important driving force. But, as it will be discussed later in this chapter,¹³ the reform failed to make sufficient progress in assigning clear responsibilities of these academic results to specific stakeholders, both at the state and the school level, and, hence it did not advance in developing accountability for academic learning.

¹²Mexico's illiteracy rate has dropped from 6.2%, in 2012, to 4.1%, it is the lowest of all times. This is very encouraging for many reasons, but above all, because from now on there will be more and more children who do not have parents who are illiterate, which statistically gives them a better chance to thrive. (<http://noticiasncc.com/cartelera/articulos-o-noticias/11/13/mexico-libre-analfabetismo-tasa-menor-4/>)

¹³See Sect. 5.7.3.

5.2.3 *Teachers' Working Conditions: An Appraisal from TALIS*

An increasingly widespread principle states that the quality of an educational system cannot exceed the quality of its teachers. In other words, teachers' qualifications, dispositions and working conditions are critical for students' learning. The 2013 results of OECD's *Teaching and Learning International Survey (TALIS)*¹⁴ – which collects internationally comparable data on the learning environment and working conditions of teachers in schools around the world with the aim to provide “valid, timely and comparable information from the perspective of practitioners in schools to help countries review and define policies for developing a high-quality teaching profession” – were made available at outset of the reform and became an important input for designing reform policies.

TALIS captures information on teacher characteristics, working environments, leadership, learning and development opportunities, appraisal and feedback, pedagogical practices and beliefs, self-efficacy and job satisfaction. TALIS' key finding was that teachers in Mexico work in more challenging contexts and feel less prepared to do their work than teachers in other countries: 44% of Mexican secondary teachers work in schools where more than 30% of the students have a socio-economically disadvantaged background. Also, more than half of Mexican teachers work in schools where the school principal reports a shortage of support personnel (60%) and of qualified and/or well-performing teachers (56%), compared with the TALIS average of 47% and 39%, respectively. Additionally, almost a quarter (24%) of the teachers surveyed reported not feeling prepared to perform their work (the third largest share of teachers in this study), compared with the TALIS average of 7%.

Furthermore, among countries participating in TALIS, Mexico had the lowest proportion of secondary teachers who reported having completed a teacher education or training program, 62%. As reported by their principal, 72% of teachers did not have access to formal induction in their institutions and 60% did not access mentoring programs, while the TALIS averages were 34% and 26%, respectively. In contrast, Mexican teachers reported a higher participation in professional development activities than their counterparts. The OECD recommendation to help Mexican teachers improve was for the education authorities “to ensure that professional development is of good quality, relevant to teachers' needs, and offers a coherent view of professional growth” (OECD 2014).

TALIS also showed that Mexico's teachers find appraisals useful to their individual practice. More than 80% of teachers surveyed reported receiving feedback on

¹⁴The international target population for TALIS is composed of lower secondary teachers and their school leaders in mainstream public and private schools. In Mexico, 3138 lower secondary teachers and 186 principals from 187 schools were randomly selected for the study and to complete the paper and online TALIS questionnaires. (OECD 2014). Mexico participated for the first time in TALIS in 2013.

their teaching following analysis of their students' test scores and observation of their classroom teaching. In contrast, fewer teachers across TALIS countries report receiving feedback via these methods (64% and 79%, respectively). Moreover, Mexican teachers have largely positive views on how feedback has helped them improve their practice.

Mexican school principals reported having little decision-making capacity relative to teachers in their schools. In general, compared with the TALIS average, a lower percentage of principals in Mexico reported having considerable responsibility for school-related tasks. Such tasks included appointing or hiring teachers (16%, TALIS average is 39%), dismissing or suspending teachers (14%, TALIS average is 29%) and establishing teachers' starting salaries and pay scales (6%, TALIS average is 14%) and teachers' salary increases (8%, TALIS average is 18%). In this case, the OECD recommendation was to "grant greater autonomy to schools" and to "provide more support and capacity building to help school principals succeed" (OECD 2014).

As will be discussed later in this chapter—in Sects. 5.3 and 5.4—the reform included the professional development of teachers and school principals (SEP 2017), as well as granting autonomy to schools (Treviño and Velasco 2018).

5.2.4 Universal Coverage of Services and the Extension of Compulsory Education

Throughout the twentieth century Mexico struggled to achieve universal coverage of basic education but, by 2012, when the reform was announced, coverage was no longer the issue it had been in the past decades. Education authorities were therefore able to shift their focus from increasing access to improving the quality of education services. In 2012, with only 66% of pupils enrolled in high school, the pressure for universal coverage had shifted to the upper secondary school level. That year, compulsory education was extended, to include high school, up to age 18. This legal reform spurred high school enrollment and, by 2018, it had increased almost 19 percentage points, to 85% (Ortega 2018). The overall growth of the coverage rates also impacted the schooling average, which had risen in the prior few years to 9.5 grades.

5.3 Key Dimensions of the Mexican Reform

5.3.1 A Performance-Based Reform

Mexico's education reform of 2012 belongs, conceptually, to the performance-based institutional reforms. Reformers strove to distinguish this reform from earlier reforms which were more concentrated on the expansion of services and less

focused on students', teachers' and institutions' performance. According to Moe (2017), these earlier education reforms belong to a historical period that corresponds to the emergence and institutionalization of major public institutions geared to delivering public services to ordinary citizens. Hence, they

...had little to do with the systems' academic performance... academic quality was not [their] main issue. Simple service-provision was". [Thus, they relied on ...] an array of constituencies with vested interests –notably, teachers and bureaucrats, ... as well as politicians and local leaders who used education's vast sums of public money for purposes of patronage and simple corruption. [In contrast, ...] performance-based reform is the new normal, even in nations such as Mexico and India where patronage and corruption are rampant, and the school systems remain very poorly developed. (Moe 2017).

The reason being that children need to be academically empowered if they are to perform effectively in the knowledge economy. Thus, *attaining quality education for all* became the propelling force of this reform (SEP 2018a). To achieve such quality, the acute inequalities within the system would need to be removed and a new form of organization and operation erected. Without deeply restructuring the system, achieving quality in education would never be attainable. In this regard, the *Educational Model for Compulsory Education: Educate for Freedom and Creativity* or NME, (SEP 2017), the core document that charted the Mexican reform, identified *five dimensions* that needed to be address in order to achieve the full transformation of the education system.

5.3.2 *First Dimension: Develop a New Curriculum*

The curriculum was deemed to be the reform's compass and the blueprint for educating students for the challenges they will face in the twenty first century. It entailed a massive curricular reform that involved rethinking education, from the early years up to the end of high school. It produced three normative documents which were prepared separately by two of SEP's undersecretaries,¹⁵ but in coordination and with a common pedagogical approach. These documents are:

Starting out Right Is the education program for the early years (from 0 to 3), known in Spanish as *Un buen comienzo* (SEP 2017e). This curricular reform included, for the first time, early childhood education as a fundamental part of a student's educational trajectory. It regarded the first 3 years of life as a critical period for both, enhancing the physical, cognitive and emotional development of children, as well as for preparing them to enter and succeed in school. Early childhood education has endured a long process to be recognized and valued as an integral part of the education system, but it still faces several challenges. First, the recognition of babies and young children as subjects of rights and as competent learners. Second,

¹⁵The first two documents were developed at the Undersecretary for Basic Education and the latter at the Undersecretary for Upper Secondary Schools.

the need to stop regarding the attention given to children –under the age of three– as the exclusive right of the working mother, in order to strengthen the fundamental right of the child to receive education and care from birth. Last, but not least, the need to articulate the efforts of several separate institutions and social organizations that offer early childhood education and other services grounded on the educational rights of children perspective.

Key Learnings for Educating the Whole Child Known in Spanish as *Aprendizajes clave para la educación integral* (SEP 2017b), is the national curriculum for grades K to 9. Sect. 5.4 analyzes the development and particularities of this curriculum, which is compulsory at the national level.

Shared Curricular Framework Known in Spanish as *Marco curricular común* (SEP 2017f). The curriculum for the last three grades of compulsory education (grades 10–12), known as *Upper Secondary Education*, is not national. It is defined both at the regional and institutional levels, and thus is not the sole responsibility of SEP. By law, other bodies –like the states, some universities and even private entities– can advance and enact curricula for this educational level, which is comprised by over 30 academic and vocational subsystems. As part of the reform and as an attempt to articulate these subsystems, SEP built this competence framework and launched an initiative to create a National Baccalaureate System (SNB), which is still in development, (Ortega 2018).

5.3.3 *Second Dimension: Place Schools at the Center of the System*

The reform's motto: *Place schools at the center of the system* meant that, in order to confront the system's bureaucratic ways, the education system needed to *be turned upside down*, so that all its components –and foremost the education authorities– would work to the schools' benefit. For years, Mexican schools were the last and weakest link in the education chain: Schools, rather than concentrating on pupils' education, had to respond to various external demands from local education authorities, often unrelated to the real needs of school operations. Precious time for learning was wasted doing other assignments.¹⁶ Thus, for the reform to succeed, it was of the utmost importance to shift the education system's focus onto the learners. This was done by a management strategy that placed schools *at the center of the system*, which meant focusing the attention of local education authorities, supervisors and

¹⁶Principals would spend a great deal of time on administrative meetings and paperwork, teachers would be demanded to fill-in endless formats with data that was later not read nor analyzed, and students learning time would be diverted to participating in a great number of programs of questionable educational nature, organized by several extra school organizations with little regard for the students' academic performance.

school communities on pupils' achievement. Focusing on learning seemed the obvious choice for schools, however it took them –and the whole system– great efforts to start changing old ways.

To improve the quality, equity and relevance of educational services, schools needed to be granted autonomy. Thus, the decision-making capacities of school communities (principal, teachers, students, and families) were legally expanded. Schools were granted more autonomy to improve operations, through the optimal use of classroom time and material resources, the professionalization of teaching staff, the promotion of collegiate work, and the involvement of parents in their children's learning.

The education reform gave the highest priority to ensuring that each school: had a consolidated governing body to exercise school autonomy in an effective manner, received adequate support from supervisors in decision-making processes, implemented support mechanisms with educational authorities, parents and society, and addressed the shortcomings of its physical infrastructure (Treviño and Velasco 2018).

The Technical Assistance Service for Schools (SATE) was created with the aim of ensuring the advice and support all schools need to effectively manage their newly granted autonomy. SATE was conceived as a team of professionals focused on providing good pedagogical support to the school, because the implementation of school autonomy also required that the school-supervision link evolved, from its traditional administrative functions, to reinforcing the technical-pedagogical function of supervisors and thus becoming an affiliation among education professionals. Thus, all supervisors (18,000) underwent an intensive training that lasted 18 months and was very well received by them. The training strategy, based on peer learning, provoked supervisors to reflect on their role and to strengthen their capacities to provide technical assistance for school improvement. (Treviño and Velasco 2018).

5.3.4 Third Dimension: Reorganize Teachers' Professional Careers

Improving the quality of teaching should be the priority of every education system. The assumption being that in order to improve learning, teaching had necessarily to be improved and it needed to be done through the professionalization of the teaching career. Thus, the third dimension of NME policies was founded on the central tenet that *teachers' proficiency sets the limit to what students can learn in schools* and therefore a rather new concept in the Mexican context was introduced: *merit*. According to these policies, which stemmed from the Teachers Professional Development Act, progress along a teacher's career path –including hiring, in-service certification, and promotion– was to be based on merit. To lure better candidates into the teaching profession, the *Professional Teaching Service* (SPD) was created.

According to De Hoyos and Estrada (2018), the SPD design incorporated many of the best international practices: appraisals for enrolling and promoting of teachers, induction period, continuous in-service training and incentives for good performance. These authors conducted an extensive statistical study comparing the high-school performance (on reading and mathematics) of teachers with the performance of the rest of the population that finished high-school, comparing the data for 55,189 teachers who started teaching between 2012 and 2017. Their preliminary results show that Mexican teachers, enrolled from 2014, are better qualified than the rest of the population that studied high school. This date coincides with the beginning of SPD and the use of appraisals to hire teachers.

Most of the efforts of the reform in this third dimension were focused on the reorganization of teachers' career path and their training, but it was also the most controversial of the reform's policies (Reimers 2018). First and foremost, the new mechanisms, based on teachers' appraisals, threatened multiple political and economic interests. Further, the consequences of a policy based on merit were neither well anticipated, nor were the benefits well communicated to teachers and the general public. Hence, the dominant narrative, fueled by the media, labelled the reform itself as a *punitiva exercise*. The argument was that evaluating teachers and using merit to select, certify, and promote them was disrespectful and vindictive to teachers and graduates of teaching training colleges; it implied that the government blamed teachers for all of the system's ills. The dissenting leaders of CNTE and the first education minister during the reform engaged in antagonistic arguments, mostly about teachers' appraisals, that went on for months and were widely disseminated in the media. For instance, in June 2015, one of CNTE's leaders accused the minister of "...assuming an arrogant, pedantic and rude attitude [...] to try to submit [them]".¹⁷ As if he wanted to prove the leader right, the minister answered back: "Regardless of *rain or thunder*, teachers will be evaluated".¹⁸

Nevertheless, not all teachers opposed the reform. On the contrary, many welcomed the possibility to enter the teaching profession as a result of their own merit and thus backed the consolidation of the SPD. The great number of graduates and teachers that willingly entered the appraisal processes revealed their support to the SPD. According to SEP's figures (Granados 2018b), in the academic year 2014–2015, 181,521 applicants registered for the first SPD appraisal and 69,490 were offered teaching jobs. For the second appraisal, held the next academic year (2015–2016), there were 159,791 candidates and 74,068 were offered jobs. The number of applicants who were offered jobs continued to rise through the next two applications. There were 84,905 in 2016–2017 and 88,864 in 2017–2018. The appraisals for promotion followed the same trend.

These results, although auspicious and necessary, are not to be taken as sufficient. Even SEP (Granados 2018b) acknowledged that improving teaching performance is

¹⁷ <https://lajornadasanluis.com.mx/nacional/reclamara-cnte-en-el-df-cancelar-evaluacion-educativa/>

¹⁸ <https://www.animalpolitico.com/2015/06/chuayfett-responde-a-maestros-habra-evaluacion-llueve-o-truene/>

not exclusively the result of evaluating teachers, it requires the effective intervention of specialized actors –such as supervisors, mentors and pedagogical advisors– to support teachers and directors in their professional development. Thus, the consolidation of the teaching profession requires more forceful advances based on three key variables: (a) the professionalization of schools’ supervision, (b) mentoring, and (c) pedagogical technical advice.¹⁹

This third dimension of the NME also included the revamping of teacher training colleges and other institutions –like the Pedagogical University– responsible for the initial training of teachers, as well as new provisions for in-service teacher training. However, the transformation of these institutions has not as yet advanced far enough.

5.3.5 Fourth Dimension: Grant Equity and Inclusion

For Mexico –a country with so many inequalities– to grow as a productive, fair and cohesive society, the education reform had to address equity and inclusion transversally, so as to foster better and more equitable education outcomes and to disassociate them from students’ socioeconomic background, gender, or disabilities. A quality education with equity and inclusion was defined by NME as one that: expands educational opportunities for all, without distinctions of any kind; favors the integration of heterogeneous school communities; recognizes that students have different abilities, tempos and learning styles; distributes equitably all resources (technical, physical and human) required for teaching and learning; and grants significant and comparable learning to all students (Tuirán 2018).

Within this fourth dimension several actions were implemented, as reported by SEP (Tuirán 2018). Among them, the following stand out: The infrastructure, furniture and equipment of 33 thousand schools underwent a process of renovation, with an investment of 2.5 billion US dollars, over 6 years; in a process of school consolidation, 7660 students were transferred from 539 very small and ill-equipped schools to larger and better-appointed schools, located within the vicinity of the students’ homes; 550 million US dollars were invested to expand the *Full-Time Schools Program*, which extends the daily learning hours, to cover over 25 thousand schools, mostly located in depressed socio-economic contexts; the number of scholarships granted was greatly increased to benefit 7.7 million students, with an investment of 1 billion US dollars, over 6 years; workshops on issues like literacy, conflict management, self-esteem and study skills were offered by schools to familiarize parents with the reform tenets, benefiting almost 109 thousand families; to encourage girls from an early age to opt for a career in STEM –and with the support of women scientists, who acted as mentors– an awareness strategy for girls and young women

¹⁹For further information on this topic, see Aceves-Estrada (2018), Farias-Maldonado (2018), and Chávez-Campos (2018).

was implemented, from primary school onward²⁰; and last, but not least, the illiteracy rate was brought down to 4%, from 6.4% (the rate reported in the 2015 population survey).²¹

5.3.6 *Fifth Dimension: Build a New Governance Structure of the Education System*

In order to promote that every stakeholder works towards fostering quality education for all, transforming the governance structure of education systems has been recommended by several multilateral agencies (UNESCO 2009; UNDESA, UNDP, UNESCO 2012). Such transformation entails restructuring the way in which the authorities administer the education system. In particular, the NME stated the need to democratize its structures in order to promote greater involvement on the part of families, civil society, and other parties with genuine interests in the improvement of education. Such participation would thus result in greater levels of confidence and legitimacy, where public education would be backed up by shared effort and responsibility. Although the NME regarded transforming governance as a necessary element of this structural reform for enabling the system to develop and fortify a culture of accountability and transparency, it was not fully developed, and it remains as one of its great pending issues.²²

5.4 Developing Twenty First Century Skills

Mexico's curricular reform could be regarded as a *disruptive innovation*, because instead of developing the new curriculum on the basis of disciplinary logics (a method generally used by past reforms), it set out to ensure that compulsory schooling would be both: consistently articulated throughout the three levels of basic education (preschool, primary and secondary) and that it would be relevant to the demands that students will face over the course of their lives. Thus, this reform could also be labelled, in terms of Reimers and Chung's (2016)²³ definition, an *adaptive challenge*. These authors introduced this concept, in the context of

²⁰At the outset of this strategy, only one girl in 20 chose to enroll in a STEM profession, in contrast to one in five boys, (Tuirán 2018).

²¹<https://www.proceso.com.mx/561558/la-sep-presume-una-tasa-de-analfabetismo-de-4-en-mexico>

²²For more information on the issues and history of governing Mexico's education system, see: Mancera (2018).

²³Reimers and Chung derive these concepts from the work of Christensen and van Bever (2014) on the tension between sustaining innovation and disruptive innovation.

analyzing curricular reforms, in contrast with that of the *technical challenge*. Such an endeavor, they explain,

requires reconciling multiple perspectives in defining the goals of education in response to different perceptions of what problems and opportunities merit the attention of schools, which are, after all, a relatively recent institutional invention, particularly in their aspiration to teach all children [... It] is one that educators and societies engage with from time to time, more episodically than the technical challenge of seeking continuous improvement in the effectiveness of schools.

For the first time, a curricular reform in Mexico started out by defining a set of educational goals that would be both, relevant to the demands that students will face over the course of their lives, as well as useful to clarify the constitutional text to a larger audience as to how education can contribute to the development of each student's potential as well as to the enhancement of society.

5.4.1 Mexico's Twenty First Century Education Goals

Since 1917, the Mexican Constitution has sought to educate the whole child, i.e. the educational purpose of the State has been to grant access to school for all children and young people, regardless of their socio-economic background, ethnic origin, or gender, as well as ensuring that the education they receive provides them with meaningful, relevant and useful life-long learning. In short, the Constitution deems education as a powerful means to secure society's viability. Article 3 states that the education system shall develop:

...harmoniously all the faculties of the human being and shall foster in them, love for country, respect for human rights and an awareness of international solidarity, independence and justice.

Defining the curricular goals proved to be a laborious and intricate undertaking, that involved many people and drafting numerous versions to achieve a consensus. This exercise of setting national goals, for the 15 grades of compulsory education, was not only a first ever, but also an explicit attempt to modify the course of education by setting an explicit new set of aims. It was an adaptive challenge, because it sought to make education relevant to the demands that students would face over the course of their lives.

An important aspect of this exercise was to yield a short and *amicable* document, finally called *Goals for Twenty First Century Education* (SEP 2017a). It is two pages long. On one page, it explores the issue of what sort of citizens Mexico needs in order to prosper and thrive as a democratic society in the twenty first century. On the other, it presents a double entry chart (see Fig. 5.1), made up of four columns and eleven rows, introducing the skills that students must develop during their schooling to become such citizens. Each of the four columns displays one of the four levels of compulsory education (K-12): preschool, primary, lower secondary and high school. The rows describe the eleven competences deemed necessary to

flourish and live fully in the twenty first century. They are the following: (1) language and communication; (2) mathematical thinking; (3) understanding the natural and social worlds; (4) critical thinking and problem solving; (5) socioemotional abilities and life project; (6) teamwork and collaboration; (7) citizenship and social life; (8) creativity and artistic appreciation; (9) health care; (10) environmental care; and 11. digital abilities. These competences are consistent with the work previously done by various authors and organizations to taxonomize them into cognitive, interpersonal and intrapersonal (Hilton and Pellegrino 2012). Being a double entry chart, it can be read in two ways. Vertically, each column displays the academic profile expected upon leaving each school level. Horizontally, each row indicates the students' gradual evolution for developing each competence, through the 15 grades that make up Mexico's full compulsory schooling.

The document is a navigation chart to orient students as well as education professionals through the complex journey of building a fairer, more equitable and developed society. It is both the utopia towards which the country should develop its citizens, as well as a path for each individual to follow. It served at least two important purposes for the curricular reform: First, communicating to society what was to be expected of schools, presently and in the future; as a metaphoric beacon whose light students, teachers and families should follow to achieve the twenty first century goals. Second, it provided a clear direction to the experts involved in the construction of the curriculum. The leaflet was distributed extensively amongst teachers and principals. More accessible versions were also designed,²⁴ in the form of posters for schools and booklets for students and families. They were circulated in the millions, in order to convey generally what the education reform was seeking.

The *Goals for Twenty First Century Education* were put to the test in the 2016 public consultation, and the final version was published in 2017 (SEP 2017a). According to the results of the 2016 public consultation (Heredia and Razo 2018), the goals received mainly positive feedback, and were generally regarded as *ambitious* goals, but in two contrasting perspectives. The most positive and prevailing view considered them inspiring and capable of guiding the Mexican educational policies. The other more negative and less widespread perception viewed them as rather unrealistic and not easily attainable, due to “insufficient consideration to the limitations and unfavorable environments that prevail in many schools”.

5.4.2 *The New National Curriculum (PreK-9)*

Mexico's compulsory education comprises 15 grades, from preschool to high-school, but the national curriculum only includes the first 12 grades –preschool (3), primary (6) and lower secondary (3)– known as *Basic Education*. Thus, in this

²⁴Some may download from: <https://www.aprendizajesclave.sep.gob.mx/index-multimedia-carteles-listado.html>

SKILLS	AT THE END OF PRESCHOOL, A 5 YEAR OLD SHOULD:	AT THE END OF PRIMARY, AN 11 YEAR OLD SHOULD:	AT THE END OF SECONDARY, A 15 YEAR OLD SHOULD:	AT THE END OF HIGH SCHOOL, AN 18 YEAR OLD SHOULD:
Language & Communication	Express emotions, tastes and ideas in their mother tongue, be it Spanish or an indigenous language. Use language to relate to others. Understand some English phrases.	Communicate feelings, events and ideas, both verbally and in writing, in their mother tongue, be it Spanish or an indigenous language. And if they are speakers of an indigenous language are also able to communicate in Spanish, verbally and in writing. Describe immediate needs, past events and their context, in English.	Communicate in Spanish effectively with multiple purposes and in different contexts, showing respect and self confidence. The same would be true if they are native speakers of an indigenous language. Describe experiences, events, wishes, aspirations, opinions and plans in English.	Express in Spanish with clarity, both verbally and in writing. Identify the key ideas in a text and in a speech and draw conclusions from them. Gather information and interpret it. Argue effectively. Communicate in English, fluently and naturally.
Mathematical Thinking	Count at least up to 20. Use reason to solve arithmetic problems, build structures with 2D & 3D geometric shapes and organise basic information (for example, in tables).	Understand concepts and procedures for solving diverse mathematical problems and for applying them to a variety of contexts. Have a favourable attitude towards Mathematics.	Have further their knowledge about mathematical concepts and techniques, in order to pose and solve more complex problems. Foresee scenarios and analyse situations, as well as appreciate the value of mathematical thinking.	Build and interpret real, hypothetical or formal situations that require the use of mathematical reasoning. Pose and solve problems applying a variety of approaches. Argue the solution to a problem using numerical, graphic or analytical methods.
Understanding The Natural & Social Worlds	Show curiosity and astonishment. Explore their close environment, pose questions, record simple data, design basic representations and expand their knowledge of the world.	Recognise some natural and social phenomena which prompt their curiosity and interest to answer questions. Explore such phenomena through research, analysis and experimentation. Know the main features of some models and representations (for example, maps, timelines and some graphic organisers).	Identify a variety of natural and social phenomena, read about them, gather information from different sources, investigate with the aid of scientific methods, pose questions of increasing complexity, do analysis and execute experiments. Systematize their findings, seek answers to their questions and use models to represent the phenomena. Understand the relevance of natural and social sciences.	Gather, register and systematize information, consulting relevant sources and carry out significant analysis and investigations. Understand the interrelation of science, technology, society and the environment in specific historical and social contexts. Identify problems, pose questions of a scientist nature and build the necessary hypotheses to answer them.
Critical Thinking & Problem Solving	Structure ideas and suggest activities for playing, learning and knowing more about their context. Solve simple problems and explain their reasoning.	Solve problems applying diverse strategies, i.e.: observation, analysis, deliberation and planning. Gather evidence to support a proposed solution to the problem. Explain their thought processes.	Pose questions to solve problems. To support their answers, they inform themselves, offer analysis and argue their conclusions. With the aid of logs & graphic organisers (like, tables & mental maps) represent their thought processes, and assess their value.	Analyse and critically question diverse phenomena with the aid of scientific methods as well as logical and mathematical thinking. Offer arguments, assess goals, solve problems, elaborate and justify conclusions and develop innovations. Adapt to changing settings.
Socioemotional Abilities & Life Project	Identify their personal qualities and recognise those of others. Show autonomy in expressing ideas to play and learn, both individually and in groups. Experience satisfaction when fulfilling their objectives.	Be able to pay attention. Identify and use their personal strengths to self-regulate their emotions. Be able to relax in order to play, learn, develop empathy and interact with others. Design and undertake short and medium term projects (for example, to improve their grades or to practice a hobby).	Assume responsibility about their well-being and that of others through caring for themselves and for others. Take action (like exercising) to procure well-being in the short, medium and long term. Transform challenges into opportunities. Understand the role of "life project" for the designing of personal plans.	Be self-conscious, determined & resilient. Procure self-regulation & healthy, interpersonal relationships. Be capable to act with effectiveness and recognise when it is necessary to ask for support. Make the most of their options and resources. Have the ability to set goals and build a life project based on them. Make decisions that are good for the present as well as for generating new opportunities. Prepare to deal with future risks.

Fig. 5.1 Goals for twenty first century education. (Reproduced from SEP (2017b): <https://www.planyprogramasdestudio.sep.gob.mx/index-english-skills-key/learnings.html>)

Team Work & Collaboration	Participate with interest and enthusiasm in both individual and group activities.	Work collaboratively. Identify their own strengths and recognise and appreciate those of others.	Recognize, respect and appreciate the diversity of skills and visions, when working collaboratively. Have initiative, be entrepreneurial and seek the completion of both personal and collective projects.	Work in teams constructively and exercise a responsible & hands-on type of leadership. Be handy to offer alternatives to perform and solve problems. Endorse a constructive approach.
Citizenship & Social Life	Talk about their family, their traditions, and those of others. Know basic social norms for both home and school.	Develop their identity as a person. Know, respect and exert their civic rights and duties. Favour dialogue. Contribute to a harmonious social environment and reject all kind of violence and discrimination.	Foster a Mexican identity and a love for Mexico. Recognise the country's individual, social, cultural, ethnic and language diversity. Seize Mexico's role in the world. Act with social responsibility, regard for human rights and respect for the law.	Recognise that diversity occurs in a democratic space, granting inclusion and equality of rights to all people. Understand the relationships between local, national and international, events. Value and practice interculturality. Appreciate the value of institutions and the importance of the Rule of Law.
Creativity & Artistic Appreciation	Develop their creativity and imagination when expressing themselves artistically (for example, through dance, music theatre and the visual arts).	Explore and experience diverse art forms. Express in a creative manner through music, dance, theatre and the visual arts.	Analyse, appreciate and execute different art forms. Identify and exert their cultural rights (for instance, the right to observe their customs and traditions). Apply their creativity to express themselves through the arts (among them, music, dance and theatre).	Appreciate the diversity of cultural expressions. Value and experience the arts as means of communication and because they provide a sense of identity and contribute to the full development of people.
Health Care	Identify their own physical traits and characteristics, and recognise those of others. Engage in physical activity through games and know that it is beneficial to their health.	Be aware of their body. Overcome challenges through the creative use of their physical abilities. Make informed decisions about their hygiene and nutrition. Take part in physical activities and games maintaining always a healthy and non violent social life.	Activate their body skills and adjust them to the different situations they encounter in play and sport. Adopt a prophylactic approach through discovering the gains of caring for one's body, eating well and practicing physical activity, regularly.	Assume responsibility for maintaining a good physical and mental health. Avoid risky behaviours and practices. Favour an active and healthy life style.
Environmental Care	Know and practice good environmental habits (for example, waste sorting).	Recognise the importance of caring for the environment. Identify both local and global problems, as well as solutions that can be implemented (like turning off the lights and not wasting water).	Actively promote caring for the environment. Identify problems pertaining ecosystems and the solutions that involve the use of natural resources responsibly and rationally. Commit to the application of sustainable actions for the environment (for instance, recycling).	Understand the importance of sustainability and assume a proactive attitude for developing sustainable solutions. Think globally and act locally. Value the social and environmental impact of innovations and scientific progress.
Digital Abilities	Know about the basic use of the digital tools available to them.	Identify a variety of tools and technological developments which they use to: obtain information, communicate, create, practice, learn and play.	Compare and select the technological resources within their context and use them for a variety of purposes and in an ethical and responsible manner. Learn various forms to communicate and gather information, select it, analyse it, evaluate it, discriminate it and organise it.	Use Information and Communication Technologies ethically and responsibly for investigating, solving problems, producing materials and expressing ideas. Make the most of these technologies for developing ideas and innovations.

Fig. 5.1 (continued)

section, only *Key Learning for Educating the Whole Child* –the national curriculum (PreK-9), (SEP 2017b)– will be analyzed. This curriculum is applicable and mandatory throughout the country in all 233,163 schools, public and private. By law,²⁵ SEP is the only body responsible for defining the official syllabi for those 12 grades.

A subject of permanent debate in every country is what content must all students learn. Similar questions arise with multiple possible answers, such as: What should be learned at school? What is fundamental and what is superfluous content? Furthermore, what constitutes a curricular priority, for what purposes, and for whom? Mexico has a long tradition of debate in this matter and has achieved some consensus. This reform brought back such controversy, as curricular development is a complex process, which must devise criteria to select and limit the content that should be included in each syllabus. It is also about formulating strategies that might enable the creation of learning opportunities, both inside and outside the classroom or school.

In the case of this reform, such opportunities were geared to achieve the vision expressed in *Goals for Twenty First Century Education*. Thus, at the outset of the curriculum development process, a main issue needed to be tackled. As in many other countries, Mexico's curriculum was overloaded with content which meant that most topics were only superficially covered. This lack of depth meant there were not enough learning opportunities to develop critical and creative thinking, as well as other higher-order thinking skills now included in Mexico's *Goals for Twenty First Century Education*. If profoundness in learning was to be privileged, some difficulties had to be overcome, especially those related to limiting the extension of content to be covered in each grade. It was essential to go beyond the accumulation of content that resulted from the processes of revising and updating the curriculum over time. Also, to ensure the relevance of the curriculum it was necessary to transcend the stance that mostly privileges both the internal logic of the disciplines and the traditional organization of knowledge to complement it with various different perspectives. An example of such different perspectives is *situated knowledge*, which aimed at introducing contexts, personal experience and viewpoints into the teaching process, allowing students to create meaning from contextual situations, to be actively involved in real activities of daily living and to address more real-world problems. Likewise, there were pedagogical considerations. For example, focusing pedagogy on key learnings, instead of demeriting what is fundamental –like developing higher-order-thinking skills– for the sake of covering too many topics. Additionally, ensuring the school community's attention to educating the whole child and its avoidance of other social demands that could interfere with students' learning performance.

The content selected for the national curriculum is the result of the work of a multidisciplinary expert-team of about one hundred specialists, composed of teachers, educational researchers, and didacticians. It is a document that resulted from the

²⁵ See Education Act 2013, Articles 12 and 48 http://www.diputados.gob.mx/LeyesBiblio/pdf/137_190118.pdf

dialogue between what is desirable and what is feasible. It considers the most current and relevant educational research on how children and adolescents learn, as well as best teaching practices. In this document, *key-learning* is a synonym for competence. It is defined (SEP 2017b) as “knowledge, practices, abilities, attitudes and fundamental values that contribute substantially to the integral growth of the student”. Key learnings or competences are to be specifically developed through schooling and “if they are not fully developed, students will exit compulsory education with severe limitations that would affect crucial aspects of their life across other contexts”. The assumption being that the lack of these competences would limit the scope of students’ citizens skills, i.e. their education will not be relevant, because they will be unable to meet the demands they will face over the course of their lives. In contrast, if key learnings are properly achieved in school, as stated in the national curriculum, pupils will be able to define a plan of what they want to be and what they will do in the future, as a result of defining specific objectives and making personal decisions—what one might call a fulfilling life project. Thus, reducing their risk of social exclusion. Grounded in this definition of *key-learning*, Mexico’s Basic Education curriculum aims at educating free, responsible and well-informed citizens who can make the most of twenty first century society. It seeks to *educate the whole child* and is thus organized (as depicted in Fig. 5.2) in three components: (1) Academic Knowledge, (2) Social and Personal Development and (3) Curricular Autonomy.

The structure of the curriculum is one of its novelties. It was intentionally simplified and systematized to facilitate its use by teachers and other readers. Among other features, its syllabi are organized using double entry tables, called *graduated-contents-table*. Each of such tables is constructed using *curricular organizers* of two magnitude orders which are intended to make evident the gradualness of the learnings outcomes (or key-learnings), whose degree of difficulty increases progressively from preschool to the ninth grade.

For instance, in this example taken from the Language Arts syllabus (SEP 2017b), Fig. 5.3 shows one row of the graduated-contents-table. The first column of the table corresponds to the first-order curricular organizer which is *Study-Skills*²⁶ and the second column corresponds to the second-order curricular organizer, which is *Oral Presentations and Public Speech*, one of the five social practices associated to Study Skills.²⁷ The learning outcomes are located in the columns to the right, and their degree of difficulty increases from preschool to secondary. The format of each learning outcome is a short statement written with an action verb in the third person singular. This format makes each learning outcome *measurable*, i.e. it is possible to observe (or to have evidence) of whether a student has achieved it or not. Teachers could adapt their teaching to the needs of each student, moving easily, *backwards and forwards*, on each row to facilitate inclusion.

²⁶Besides Study-Skills, the Spanish Language Arts curriculum includes two other first-order curricular organizers: Literary Skills and Social Interaction Skills.

²⁷The other four social practices associated to Study-Skills are: Reading abilities, Reading-Comprehension, Note taking, and summarizing and Writing.

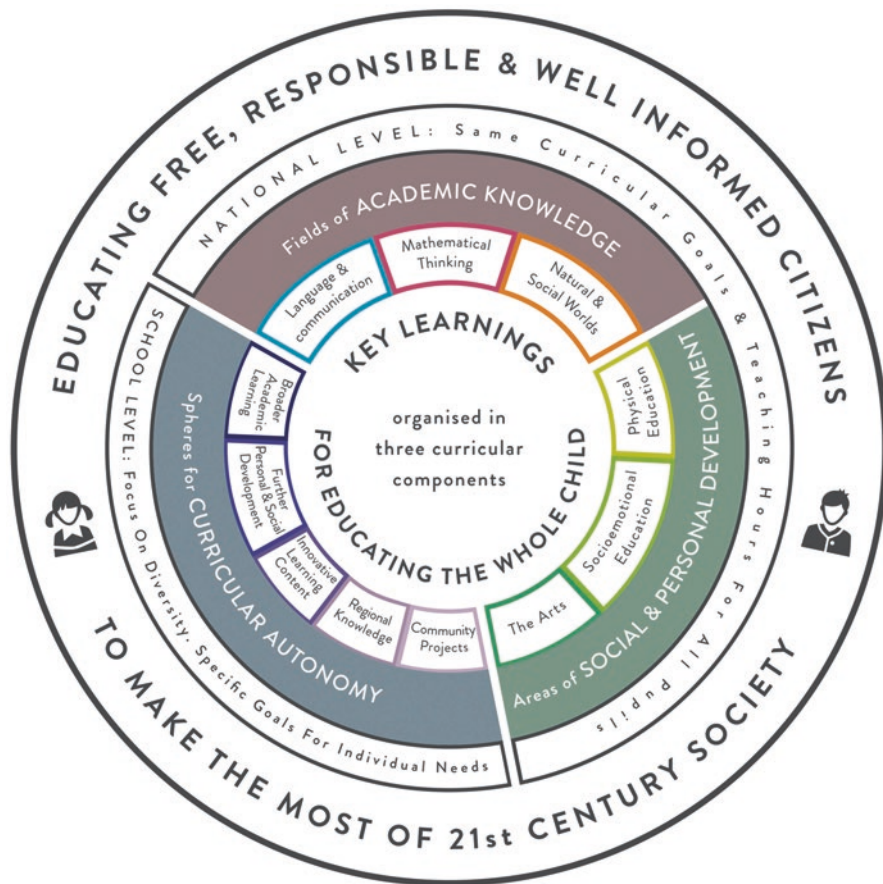


Fig. 5.2 Curricular components. (Reproduced from SEP (2017b): <https://www.planyprogramas-destudio.sep.gob.mx/index-english-skills-keylearnings.html>)

AREA	SOCIAL PRACTICE	PRE-K	PRIMARY			SECONDARY		
			1st & 2nd grades	3rd & 4th grades	5th & 6th grades	7th grade	8th grade	9th grade
STUDY-SKILLS	Oral presentations & public speech	Identifies aloud some characteristics of non-fiction texts.	Delivers a class presentation on a topic using a poster, compiled by the student.	Delivers a school presentation on the physical features & historical events of his/her town.	Delivers a public presentation on scientific facts, discoveries & experimental results, collected by him/her.	Delivers a lecture on a topic of his/her choosing.	Participates in a public round table.	Participates in a public debate.

Fig. 5.3 Example of a graduated-contents-table taken from the Spanish Language Arts syllabi (With info from SEP (2017b), elaborated and translated by E. Bonilla-Rius <https://www.planyprogramasdestudio.sep.gob.mx/index-english-skills-keylearnings.html>)

5.4.2.1 Academic Knowledge

The first component of the curriculum is *Academic Knowledge*. It is geared to developing the student's cognitive competences, as well as the *learning to learn* ability, and some intrapersonal and interpersonal skills, such as intellectual openness, teamwork and collaboration. It encompasses subjects organized in three fields: Language and Communication; Mathematical Thinking; and Exploration and Understanding of the Natural and Social Worlds.

Language and Communication This field includes three subjects: Language Arts in the student's mother tongue, which could be Spanish or one of the 60 plus indigenous languages; Spanish as a second language, for indigenous language speakers, and English as a foreign language.²⁸ For instance, in the case of Spanish Language Arts, the subject is organized in three competency areas (first-order curricular organizers), which in turn are organized by means of language social-practices (second-order curricular organizers). These three areas are:

Study-Skills, students' work in this area aims at acquiring the uses of language for learning with the main purpose of preparing them to do well in their academic performance.

Literary-Skills, the social practices of language included in this area contribute to students' understanding of the creative intention of language and to expanding their cultural horizons.

Social Interaction-Skills, social practices in this field have the purpose of training responsible and thoughtful citizens, from the acquisition of basic skills (like filling formats) to fostering critical and analytical attitudes towards the information disseminated by the newspapers, television, radio and internet.

Mathematical Thinking The only subject in this field is Mathematics, and its curricular organizers are: Number, algebra and change; Shape, space and measurement; and Data Analysis & Probability.

Exploration and Understanding of the Natural and Social Worlds This field includes six subjects: Natural Sciences & Technology (Biology, Physics and Chemistry), History, Geography and Civics. It aims at developing analytical thinking and some research abilities.

²⁸Raising the standards of English teaching was a priority of the reform. Thus, the syllabi –for the 10 grades (K3 to 9)– of this subject were developed with the supervision of Cambridge English Language Assessment, in order to fit the standards of the Common European Framework for Languages.

5.4.2.2 Social and Personal Development

This second component of the curriculum contributes to educating the whole child, especially through the development of skills associated with *learning to be* and *learning to live together*. It includes three areas of development: Arts, Socio-Emotional Learning (SEL) and Physical Education (PE). The introduction of SEL is one of the most novel and important features of this curriculum. It allocates specific teaching time, throughout all 12 grades, for students to learn to recognize and manage their emotions. This curriculum acknowledges that identifying and regulating one's emotions can be taught and learned. They are no longer considered personality traits, and the curriculum highlights the role of schools in educating emotionally healthy individuals. The SEL syllabus is organized in five dimensions to be developed from the beginning of preschool (age 3) to the end of secondary school (age 15). These dimensions are self-knowledge, self-regulation, autonomy, empathy and collaboration. The nature of the first three is intrapersonal, while the latter two is interpersonal. Each of the five dimensions, in turn addresses five emotional skills:

Self-Awareness:	attention, emotional consciousness, self-esteem, well-being, appreciation & gratitude.
Self-Management:	metacognition, emotional-expression, emotional-regulation, grit, self-motivation.
Autonomy:	self-initiative, emotional needs targeting, self-efficacy, openness & leadership, decision making & commitment.
Empathy:	respect for others, perspective-taking, spotting prejudice, appreciating diversity, caring.
Collaboration:	assertive communication, responsibility, inclusion, conflict resolution, interdependence.

Arts, SEL, and PE require the development of cognitive abilities, but the curriculum stresses that they are not to be considered *subjects*. Since their nature is the promotion of soft skills, they are labelled *areas of development* and specific pedagogical approaches and assessments are recommended, which differ from those employed in the academic fields. Cautionary notes, like this instance, are important, because they highlight some of the problems that teachers face when attempting to educate the whole child. In this case, the curriculum warns them about the difficulties of using methodologies traditionally developed for teaching and assessing academic subjects when attempting to develop soft skills. But by pinpointing such challenges, this curriculum could also be interpreted as a blueprint for initial and in-service training, because it not only defines learning outcomes, but it also highlights new skills that teachers need to develop. Whether they do it through enrolling in formal professional development programs, individual learning, groups of peers—often school based—, or otherwise, will depend both on each teacher's own particular needs as well as on the availability of opportunities for professional development.

5.4.3 *Curricular Autonomy*

The third curricular component, called *Curricular Autonomy*, is innovative and flexible. It is novel in that it provides students with opportunities to learn new topics or deepen their knowledge, according to individual interests; develop new skills; overcome shortcomings and difficulties; and strengthen their identity and sense of belonging. It is ruled by the principle of inclusive education, because it seeks to meet the individual educational needs and interests of all students. Whereas the content of the first two components is defined by SEP and prescribed at the national level, (for example, all students must receive instruction for an equal number of teaching hours per year and they should meet the same curricular objectives), the content for Curricular Autonomy should be defined at the school level. The new regulations allow schools to develop curricular content, called *clubs*, in five spheres: (1) Expanding academic instruction; (2) Enhancing personal and social development; (3) New relevant content; (4) Regional knowledge; and (5) Social impact projects.

Schools are encouraged to organize mixed age clubs, leading to new ways of interaction and coexistence in the school. It also offers schools opportunities to introduce innovative content, like coding, robotics, finance, entrepreneurship, and it allows teachers to experiment with new methodologies and to renew their teaching practice. Likewise, it grants schools the chance to analyze their strengths and weaknesses and to design an improvement plan. The number of hours devoted to this component varies from school to school, depending on the duration of their school day. In most schools, 20% of class time is devoted to clubs, but schools that have longer school days (of up to 8 h) have to spend all their extra time in clubs, which often turns out to be twice the time officially designated for the other two components.

In order for schools to be able to fully implement this component, the curriculum recommended that schools established worthy alliances with civil society and other organizations like universities:

By gaining autonomy, schools can approach public and private organizations specialized in educational issues to be their allies in their quest to overcome lags and reach their goals more quickly. [...] these alliances] will increase the social and cultural capital of the members of the school community. The greater the social and cultural capital, the greater the capacity of the school to transform itself into an organization that learns and promotes learning.²⁹ (SEP 2017b, p. 39).

Curricular autonomy is an innovation that opens up growth opportunities for schools and should not be construed as competent authorities transferring their responsibilities to schools or waiving their obligations. On the contrary, it compels them to support schools and to provide them with resources, so that schools can

²⁹The curriculum promotes these alliances as one of the ways in which civil society organizations and others interested in education, such as individual researchers or universities, can add to the transformation of schools. It reckons that their initiatives, publications and other actions will also contribute to reflection on how to support the school to grow and strengthen. SEP issued specific guidelines to guide and regulate these alliances: https://www.planyprogramasdestudio.sep.gob.mx/descargables/doctos/dof/DOF_lineamientos-de-autonomia.pdf

accomplish an adequate implementation of curricular autonomy. Thus, it is about achieving transformations, from the very heart of the school, which would not be possible to generate externally, (Granados 2018b).

5.4.4 Pedagogical Principles of the Curriculum

From primary school onwards, lecturing is Mexico's most prevalent teaching practice. For most of their schooling, students have traditionally listened (or pretended to be listening) to their teacher talk, with few opportunities to research, think, pose questions or interact with other students and thus they have few opportunities to be able to develop twenty first century skills. Therefore, the new curriculum is grounded in more interactive pedagogical approaches, in contrast with the previous one. It emphasizes the importance of teachers acquiring new skills and gradually incorporating new practices into their teaching, grounded in 14 pedagogical principles. These principles are: (1) Focus the teaching process on students and their learning; (2) Incorporate students' prior knowledge into the learning activities; (3) Offer scaffolding to students' learning; (4) Make a point of knowing about students' interests and weave them into the learning activities; (5) Stimulate students' intrinsic motivation to learn; (6) Recognize the social nature of knowledge and thus the importance of students' dialogue and interaction; (7) Promote situated learning by incorporating authentic activities into the teaching process; (8) Visualize lesson planning and learning assessment as two interrelated processes; (9) Model learning to students; (10) Value students' non-formal and self-directed learning; (11) Favor an interdisciplinary approach to teaching and learning; (12) Foster a learning culture; (13) Cherish diversity as a source for knowledge and learning, and (14) Use classroom discipline as a means to promote learning.

The new curriculum considered the gradual but constant application of these pedagogical principles in the classroom –as a necessary condition for the educational transformation it sought– while also acknowledging change would not happen overnight. Hence, this transformation was set as a mid-term goal, that would take some years to be fully implemented. It would require the pedagogical evolution of teachers, in order to yield better student learning outcomes, and thus thoroughly attaining the twenty first century goals, defined by the reform.

5.5 Implementing the Curricular Reform

The new curriculum was innovative in both form and substance, but –as with all curricula– its greater challenge was to reach full implementation. Even with the provision of effective in-service training courses and incentives for change, achieving compromise among all teachers and schools was a considerable challenge. It relied heavily on transforming teaching practices, but –as Webster et al.

(2012) have cautioned— change in the teaching profession should not be understood “as if teachers were a single block of professionals, all having the same responses”. Implementing this curriculum required what Reimers (2017) refers to as *efficiency enhancing change*, because it entails “changes in instruction reflecting emerging notions of which competencies matter, but not widespread consensus on either goals or instructional practices to achieve them”. He argues that paradoxically, in this form of educational change, practitioners (e.g., those who lead the implementation efforts) might know more about the conditions which are necessary for the curriculum implementation to succeed than those who study them (e.g., theorists and researchers). It is what he calls “a mismatch between public and private knowledge”.

This curriculum highlighted that the presence or absence of certain conditions—called *means to achieve twenty first century goals*— could favor the good management and implementation of the curriculum or hinder it. Some of these conditions are to be promoted at the school level and other depend on the education authority's implementation, both at the federal and local levels. The most outstanding means that schools need to work-on to achieve implementation are: (1) Promoting ethics of care to be the regulating principle of all social relations in school; (2) Assimilating the 14 pedagogical principles introduced above into instructional practices; and (3) Bonding with families to jointly promote learning, and evolving to become an organization that learns and promotes learning.³⁰ Whereas the means that depend on the authorities' intervention are to: (1) Supply relevant inn-service training opportunities³¹; (2) Secure good initial teacher training options; (3) Allow curricular flexibility to schools (both to apply their curricular autonomy as well as to make curricular adaptations when needed); (4) Run a good quality technical assistance service for schools; (5) Provide mentoring to new teachers; (6) Grant funds to schools to be spent on improving their students' learning outcomes; (7) Distribute good quality educational materials; and (8) Periodically renew the school's infrastructure and equipment.

To aid the implementation of the curriculum in schools as well as to honor the principles of equity and inclusion of the reform, a new generation of educational

³⁰According to the new national curriculum, for schools to become learning organizations they need to: favor a learning culture, use school-hours optimally, strengthen the head's leadership, receive better technical assistance, allow more autonomy to the school's teaching council, improve the functioning of parents' associations, establish worthy alliances with civil society and others, receive more federal and local funds to be spent by the school's teaching council, and run a Summer-school. (SEP 2017b).

³¹The SPD introduced five dimensions to be addressed by inn-service training: D1: teachers who know their students, how they learn and what they should learn. D2: teachers who organize and evaluate class work and carry out pertinent didactic interventions. D3: teachers who regard themselves as professionals, continuously improving in order to support their students' learning. D4: teachers who, for students' sake, embrace the teaching-profession's legal responsibilities and ethics. D5: teachers who actively participate in the effective functioning of the school and who bond with the school community and with families to ensure that all students successfully complete their schooling. (SEP 2017b).

materials were developed or acquired by SEP. Thus, in August 2018 more than 200 million free copies of 1492 new titles were distributed to public and private schools (Granados 2018a). This publishing endeavor included various formats –like macro type and Braille system– and the production of new textbooks for *telesecundaria*³² students, for teaching English as a foreign language, and in 22 indigenous languages.

5.5.1 *Route for the Implementation of NME*

In March 2017, when the NME was made public, SEP also published a blueprint for implementing the reform, called *Route for the implementation of the New Educational Model (Ruta para la implantación del Nuevo Modelo Educativo)*. This document (SEP 2017d), the first of its kind in Mexico for an educational reform, contains the overarching policies to be carried out in the short and medium term for achieving NME objectives. Such policies were regarded as priorities to the extent that they were deemed indispensable or strategic for consolidating the NME’s five dimensions and for ensuring their continuity beyond the 2012–2018 federal administration. Due to their vast differences in stakeholders, scale and organization, the document broke down the policies in two separate sections: Basic and Upper secondary education. In both cases, it defined each policy, its objectives and relevance, as well as the main activities to be advanced by identifiable SEP’s officials and other stakeholders responsible for implementing the policies. It also included specific goals and success indicators, for each policy, per fiscal or school year, as appropriate.

Since the document was published in early 2017, the goals for the 2018 fiscal year (the last of the administration) were defined based on 2017 budget projections and it cautioned that achieving them would depend on the availability of resources approved by Congress for that year. However, it stressed that “in the current context of austerity the Federal Administration is forced to set objectives that, *while remaining ambitious, are budget viable*”. The document also contained an annex with timelines for the various policies introduced by the reform and for several regulations that needed to be modified or created anew. In its introduction, this document also stressed the importance of making the NME widely known, so as to be understood and embraced by local education authorities, principals and teachers. It anticipated the need for a broad social consensus:

The success of the NME implementation largely depends on the school communities understanding and embracing the new pedagogical principles, and school-management rules as well as on the support provided to these communities by the local authorities. (SEP 2017d).

³² *Telesecundaria* is a system of distance education programs for secondary students created by the government of Mexico and available in rural areas of the country as well as Central America, South America, Canada and the United States via satellite. For more information: <https://en.wikipedia.org/wiki/Telesecundaria>

5.5.2 *Stages of Implementation*

The reform began in December 2012 and continued until November 2018, for the full federal administration. It entailed various milestones, like the following, mostly related to the curriculum and its implementation:

- December 2012: The president formally announced the launching of the educational reform and sent three education bills to Congress.
- March to September 2013: Legislative process that amended the Constitution –to include the responsibility of the State to provide quality education and the organization of teachers' appraisals, associated to quality education– and the enactment of three new education acts.
- January to June 2014: First public consultation with the purpose of defining the education goals and the educational priorities for developing the curriculum (Basic education, Upper secondary & Teacher training colleges).
- February 2016: The National Board of Directors of the Strategy *School at the Centre of the System* was formally established, with education officials from SEP and the 32 states governments as its members.
- July 2016: The first drafts of the NME, Mexico's Twenty First Century Goals, and the Curriculum (PreK-9) & (10-12) were published.
- July to December 2016: Second public consultation and debate on the recently published documents.
- March 2017: The final versions of NME and *Goals for Twenty First century Education* and *Route for the implementation of the New Educational Model* were published.
- June 2017: Publication of the final versions of the curriculum (PreK-9) & (10-12).
- July 2017: Started NME's implementation route.
- August 2017–August 2018: Several implementation actions to disseminate the national curriculum (PreK-9) in all schools: Pilot project (Phase 0) of Curricular Autonomy implemented in 1027 schools; online in-service training for one million plus teachers, and several other academic activities, at the national, regional and school levels.
- December 2017: The final version of the curriculum for early childhood (0-3) was published.
- July 2018: Presidential election.
- August 2018: Application of the national curriculum (PreK-9) started in schools.
- December 2018: A new federal government takes office.

The process of implementing the national curriculum (PreK-9) started in March 2017, with the publication of three seminal reform documents: The twenty first century goals (SEP 2017a), the NME (SEP 2017) and the reform's implementation route (SEP 2017d). A few weeks later the curriculum (SEP 2017b) was published³³ and schools had the full academic year 2017–2018 to prepare for its application in schools the following year. This application was planned in two stages. The first stage was implemented in the academic year 2018–2019 and the second was to be implemented the year after.³⁴ The federal administration ended on November 30, 2018 and thus could not oversee the full implementation of the curriculum in schools.

To facilitate high-quality implementation of the curriculum at the classroom level, and to disseminate the core tenets of the reform and the main innovations of the curriculum, e.g. over one million teachers voluntarily enrolled in *on-line courses* to prepare for implementing the new curriculum in their classrooms (Fariás 2018)³⁵ and almost as many teachers participated in multiple other academic activities, through 2017–2018. These activities were planned jointly by the federal and local authorities, who also met numerous times in national and regional sessions organized by the National Board of Directors of the strategy called *School at the Centre of the System*.³⁶ This board was created in January 2016 to unite decision makers from the state and federal authorities in a collegiate and horizontal body in charge of designing and overseeing the implementation of the reform policies in schools.

³³The curriculum was published in print as well as digitally, and a very comprehensive web site called *Key Learnings* was launched (<https://www.planprogramasdestudio.sep.gob.mx/index.html>) in July 2017. During the academic year 2018–2019 every teacher, headmaster and supervisor received the printed version of the curriculum. Over 20 different titles were published and distributed to fit all profiles.

³⁴The first stage started, at the beginning of the academic year 2018–2019, in August 2018, with the full application of the curricular components: Social and Personal Development and Curricular Autonomy, in all 12 grades (PreK-9). The application of the Academic Knowledge component was split in two: in August 2018, the first implementation stage, the academic subjects were taught in six grades: all three preschool grades, primary's 1st and 2nd grades and secondary's 7th grade. The remaining six grades (primary's 3rd, 4th, 5th and 6th grades and secondary's 8th and 9th grades) were due to start implementing the curriculum in the second stage, starting at the beginning of the next academic year 2019–2020, in August 2019.

³⁵In August 2018, at the beginning of the first implementation stage 26,547 teachers participated in a satisfaction survey conducted by SEP, with the purposes of (a) assessing if the online courses had met teachers' expectations; (b) having a clear indication of how to improve such courses; and (c) orienting the design of new in-service strategies. Over 85% of teachers found the course activities relevant; liked the educational resources (readings, videos, etc.); thought the course was useful for becoming ready to implement the new curriculum; and helped them identify their own shortcomings. Link to the online courses: https://fcregistro.televisioneducativa.gob.mx/descargas/AC_Repository.html

³⁶For more information: <https://www.gob.mx/sep/prensa/mensaje-del-secretario-de-educacion-publica-aurelio-nuno-mayer-durante-la-reunion-de-instalacion-e-inicio-de-los-trabajos?idiom=es>

5.6 The Politics of the Reform

One of the most important factors for the implementation of this reform was the involvement and commitment to change of several educational authorities and political actors. However, the implementation followed a *top-down* approach which in the long run also proved to be its main hindrance. There seems to be a consensus in that the absence of a more *bottom-up* approach resulted in several teachers' groups and school communities feeling left out from the decision-making-process of the reform, and therefore they did not identify enough with its objectives, because they did not see themselves fully represented in them. Thus, some objected to some aspects of the reform some others rejected the reform, and some more argued it was imposed on them.

5.6.1 Political Pact and Legal Reforms

To set the foundations for the NME, on December 2, 2012, 1 day after the inauguration of the federal administration, the leaders of the then three largest political parties signed an agreement known as the *Pact for Mexico*.³⁷ The 31 state governors, the head of Mexico City's government, and the presidents of the upper and lower houses of Congress also endorsed it, making it the most important political agreement in decades. The pact aimed at promoting growth, creating jobs, and reducing poverty and social inequality. To do so, it proposed eleven structural reforms³⁸ that had been obstructed by political gridlock since the 1994–2000 federal administration. The pact's agenda covered 95 policies, with the education reform being one of the most substantial. This political agreement gave rise to a great deal of legislative activity over the next 2 years or so.³⁹

The legal changes for the education reform started in 2013, with amendments to Article 3 of the Mexican Constitution, which recognized the right to a quality education for all, and the enactment of three educational statutes: an amendment to the Education Act 1993 and two new statutes: the Educational Evaluation Act 2013 and the Teachers' Professional Development Act 2013.⁴⁰ These statutes aimed at

³⁷ Those parties were: PRI, PAN and PRD, for more information on the Pact, see <https://www.as-coa.org/articles/explainer-what-pacto-por-m%C3%A9xico>

³⁸ These reforms were: education, social security, energy, telecommunications, electoral politics, labor regulations, economic competitiveness, financial policies, taxes, criminal laws and transparency laws. (<https://www.economist.com/news/21566314-enrique-peña-nieto-mexicos-newly-elected-president-sets-out-his-priorities-mexicos-moment> <https://www.dineroenimagen.com/economia/estas-fueron-las-11-reformas-que-marcaron-el-gobierno-de-pena-nieto/104937>)

³⁹ See Sada (2013).

⁴⁰ For further reference, see INEE (2015) *Reforma Educativa. Marco Normativo*, México. http://www.senado.gob.mx/comisiones/educacion/docs/docs_INEE/Reforma_Educativa_Marco_normativo.pdf

professionalizing teachers through the oversight of their performance, thereby ending the inheritance, sale, and lifetime tenancy of teaching positions. The Educational Evaluation Act 2013 upgraded INEE (Sect. 5.2.2), giving it, amongst other things, autonomy from SEP, and the Teachers' Professional Development Act 2013 created the very controversial SPD (Sect. 5.3.4).

5.6.2 *Public Consultations*

The main tenets of the education reform are grounded in decades of national and international research, two large public consultations, and recommendations from an analysis of the education system conducted prior to 2013, which identified the challenges the Mexican education system faced in meeting the demands of the knowledge society.⁴¹ The public consultations had substantial participation, both in the number of people who offered their vision and the importance of the actors involved, including: The Governors' Conference (CONAGO), INEE, local educational authorities, teachers, legislators, education experts, researchers, parents and NGOs. The first public consultation took place in 2014, with the organization of 18 regional forums. The conclusions of this process were presented at three national meetings. More than 28,000 people provided input, of which more than 15,000 were in writing. Considering these contributions, in July 2016, SEP published first drafts of the reform documents which were put forth in a second public consultation. This was held during the second half of 2016 and allowed for broad and committed social participation. In total, more than 81,800 entries and 298,200 comments were registered.⁴²

Additionally, more than 100 renowned specialists – nationally and internationally recognized– participated in designing the curriculum. Among them were experts in the various disciplines included in the curriculum, in curricular development and didactics, with teaching experience in one or more of the basic educational levels. Once the curriculum document was assembled, it underwent a process of technical validation by academic bodies, including: the Mexican Academy of History, the Mexican Academy of Language, and the Mexican Academy of Sciences. To ensure successful implementation of the curriculum in the classroom, hundreds of thousands of teachers participated in multiple

⁴¹ See, for instance: Uribe et al. (2012), INEE (2012), and Santiago (2012).

⁴² This consultation included: 15 national forums organized by SEP with the involvement of more than 1000 people from different sectors; over 200 forums, with almost 50,000 attendees organized by the local authorities, in the 32 states; 28 extended documents prepared by different institutions with opinions and proposals; 1.8 million visits to the general web page; the views of more than 30,200 school communities entered in a particular web page designed for this purpose. All these inputs were systematized by a well reputed team of researchers at the PIPE-CIDE. For the full research report see Heredia and Razo (2018).

activities held during the academic year 2017–2018 to learn about the core tenets and main innovation of the curriculum (Sec. 5.5).

5.6.3 *Reform Support and Resistance to Change*

Since the reform rested on the assumption that teachers' proficiency sets the limit for what students can learn in schools, the reform focused heavily on the professionalization of teachers and the new legislation laid its foundations, as it has been argued above (Sects. 5.2 and 5.3). One of its central objectives was for the State to regain control of the country's public education. Thus, the powerful SNTE needed to be curbed, which was applauded by many and not so warmly received by some. Most notoriously, CNTE was not prepared to accept the new legal terms and promoted a smear campaign against the educational reform, which captured the media's attention. The media, in turn, conveyed the very biased idea that *teachers*—as if they were a monolithic block—were all against the reform. As previously stated (Sects. 5.2.2 and 5.3.4), schools and pupils in states where CNTE has had the most influence for decades, were especially affected.⁴³ As was discussed in Sect. 5.2 of this chapter, CNTE vehemently opposed the reorganization of the teachers' career path mainly because it threatened the income and the political power they derived from controlling teaching positions. However, rather than acknowledging their own disreputable practices, CNTE put forth a narrative to discredit the evaluation of teachers as a *punitive exercise*. The hundreds of thousands of teachers who have happily and voluntarily undergone the new evaluations—tens of thousands more than CNTE's objecting teachers—should have been sufficient to counteract CNTE's effect in the public opinion. However, it was politically profitable for one of the opposition parties to incorporate CNTE's cause into his political agenda. This party won the July 2018 presidential election and took office on December 1st, 2018, leaving many of the reform policies in limbo.

5.7 *Assessing the Execution of Reform Policies*

It is rather early rather early to properly evaluate the expected systemic changes of this reform. However, there are some interesting achievements—supported by studies and surveys conducted by independent bodies and individuals—that are presented here: (1) An overview of the reform based on an OECD study (Sect

⁴³There is plenty of evidence from people, in particular areas of the country, directly distressed by CNTE's months-long picketing and striking. Like this testimony of Carlos Tello (2018), well known novelist and historian, "I lived in Oaxaca, the violence of the teachers, who for months took the center of the city, blocked roads, made children lose classes, broke and defaced everything, and drove hundreds of businesses into bankruptcy."

5.7.1); (2) The results of the pilot program to implement curriculum autonomy in schools (Sect 5.7.2); (3) An analysis of the importance of state authorities' participation in the implementation of policies, particularly for improving student learning outcomes and for accountability purposes (Sect 5.7.3); and (4) The importance of reforms' allowing continuity to successful policies, in this case by expanding full-time schools, for their effectiveness in improving students learning outcomes (Sect 5.7.4).

5.7.1 *OCDE's General Appraisal of Mexico's Educational Reform*

A team of researchers led by Beatriz Pont⁴⁴ recently conducted a comprehensive study (OECD 2018a) of the different structural aspects of the Mexican reform. It stressed that many of the changes that Mexico started to implement in 2013 are moving in the right direction:

Mexico has taken important steps to improve the coverage and quality of its education system and is moving from a system that is driven by inputs and numbers towards one based on quality of education, and more focused on student learning. [To progress further on this path] Mexico's education system should continue its efforts to strengthen the delivery of compulsory education in its schools to improve student learning... [But it also warned that] all the merits of the recent educational reform package require careful support with an inclusive and resourceful implementation process... [they need] time to mature and flexibility to be adjusted as required to ensure schools deliver quality education for all students.

Pont's team offered various recommendations for the new government: a) Reinforce the vision and goals of the reform; b) continue focusing on student learning; c) promote stakeholder engagement; d) take the context into consideration; e) secure enough resources; f) and revise the strategy.

These researchers also identified four priorities for future policy development: (1) Providing equity with quality; (2) Providing twenty first century learning to all students; (3) Supporting teachers and schools; and (4) Focusing evaluation and assessment on schools and student learning. The study highlights the need to reinforce inclusiveness, horizontality and collaboration in the future implementation processes. Because, although it recognizes Mexico's great capacity "to implement national policies and programs to a very large scale" to be quite impressive, it also emphasizes that Mexico has followed a top-down approach, and highlights that such an approach has limitations and it therefore needs to be coupled with bottom-up strategies.

⁴⁴Senior education policy analyst of the OECD.

5.7.2 *Piloting Curricular Autonomy*

During the academic year 2017–2018, Curricular Autonomy, the most novel of three components of the new national curriculum was implemented in 1027 schools, as a pilot trial known as *Phase 0*. FLACSO-Mexico conducted a survey (Gomez-Morin 2018) to assess the challenges faced by school communities when implementing this component of the reform. The findings showed Phase 0 allowed schools to be immersed in a very interesting and productive reflection process, which, by gaging their own school's context and identifying the individual interests and needs of their students, enabled them to make curricular decisions. The survey revealed the diversity of hurdles school communities encountered while implementing clubs. However, it also showed that, in general, schools developed innovative and flexible strategies to overcome such hurdles, revealing this component's potential to transform the organization of learning activities within a school. This is a good example of how by relying on the ingenuity of executors –rather than on theorists' knowledge– *efficiency enhancing change* was brought about, Reimers (2017). According to FLACSO's survey, the schools involved in Phase 0 reported improvement in the following areas:

The students' interest in learning was boosted, particularly in relation to the clubs they were registered in

Both students and teachers reported diverse opportunities for meaningful learning, and they described the work they did as an enriching experience.

Better student interaction, with a noticeable decrease in bullying

This might be the result of students from different grades and classes being allowed to register in a club according to their individual interests, rather than their age or their class. This reorganization of the school allowed children to get to know pupils from other classes, to experience new interactions, and to build new relationships.

Strengthening students' sense of belonging to the school community

The fact that students are consulted about their interests and then allowed to choose which clubs they will register has enhanced students' confidence, pride, and sense of belonging to their school.

Improvement of positive attitudes and values in students

Again, students being considered when designing the autonomous curriculum of their school appears to have benefitted their attitudes and values. They show more respect and are more prone to collaborate than before.

Consolidation of interdisciplinary teaching teams

Teachers have collaborated more and have been opened to organizing teaching teams, with each teacher bringing to the table specific content knowledge and skills.

Increased collaborative work among students, among teachers, and between students and teachers

The active participation of all stakeholders in developing the autonomous curriculum has enhanced the interaction among all members of the school community, including parents. And their involvement has had a positive impact on students' learning.

However, since this evidence is part of an ongoing implementation process and only one school year has elapsed, it is still not feasible to ascertain the level of impact that these developments might have in terms of long-term improvements in the quality of learning and the general organization of the school. An urgent issue that emerged from the survey is the need for more in-service training for teachers, head teachers and supervisors. The Curricular Autonomy component demands a great deal from these professionals, as active protagonists in designing the autonomous curriculum of their schools. Phase 0 participants continuously expressed a need for greater support and advice during the implementation process, not only through training, but also with timely follow-up by supervisors and other responsible stakeholders. Furthermore, these schools identified the need for more training, specifically for the preparation of the school diagnosis, the planning stages, and the design of the autonomous curriculum of their school.

The regulations for the implementation of Curricular Autonomy require that schools design clubs –or choose them from a menu sanctioned by SEP–⁴⁵ well adapted to their particular conditions, including the infrastructure and resources of the school. However, the survey indicated schools need more support to ensure the autonomous curriculum they develop is truly appropriate to their own context. In this regard, the survey revealed the need to continue improving the infrastructure and architectural design of schools to be better equipped to respond to the demands of twenty first century goals. Traditional classrooms turned out not to be well suited for many of the clubs designed within the Curricular Autonomy component. What is desirable is the development of learning spaces that allow each child to unleash their full potential, promote collaborative work, and foster individual concentration, when needed.⁴⁶

The survey has made clear that there have been gradual, but concrete, steps towards implementing curricular autonomy in schools; however, there is still a long way to go to fully achieve all the assumptions and core tenets the new curriculum has put forward for this curricular component. Future efforts must be channeled to further consolidate those elements of curricular autonomy which have had positive impacts on students and the educational community in general; as well as to reinforce the strategies for curricular design and pedagogical development in schools. This will facilitate an important transformation of schools, not only by laying the

⁴⁵To access this menu go to: https://modulos.siged.sep.gob.mx/propuestas_curriculares_cicloescolar_18-19/

⁴⁶Several architects are already very successfully designing such spaces, in the USA, Europe, China and other parts of the world. See, for instance, Prakash Nair (2014) <https://www.fieldingnair.com/team/prakash-nair/> and Rosan Bosch (2018) <http://www.rosanbosch.com/en>

conceptual and organizational foundation to grant schools an unprecedented margin for curriculum development, but also in the improvement of institutional conditions and capacities that will bring about the transformation of educational practices that will in turn ensure educational quality.

5.7.3 Local Authorities' Strategies to Improve Learning Outcomes and Curb Inequality

As discussed earlier more accountability of all education stakeholders is required, particularly at the state level and with regard to students' learning outcomes. The National System of Educational Evaluation Conference is a collegiate body that stemmed from the legal reforms of 2013, which included high officials from SEP and INEE as well as the secretaries of education of the 32 states. One of its main purposes was to monitor and verify compliance with the evaluation policies, like students' performance in PLANEA tests. If this body was to continue its work as originally planned, such accountability could be in place rather sooner than later. The data analysis of PLANEA 2017, at the state level, provides very compelling evidence on the importance of state educational authorities' involvement when they place student learning outcomes at the core of their policies. Between 2015 and 2017, 11 states significantly increased their results in Spanish and 18 did so in Mathematics. Some states like Sonora (INEE 2018), Puebla (OECD 2016) and Mexico City (AEFCM 2018) made concerted efforts to improve the students' learning outcomes. Despite these efforts, students' academic performance at the national level remained, in 2017, very much the same it was in 2015. The improvements of some states were defused by the deterioration of other states' mean scores, like Tamaulipas (which declined 28 points in both Spanish and Mathematics) and Zacatecas (which declined 23 points in Spanish, placing 27th out of the 28 states that took the test).⁴⁷ Thus, without clear accountability from local authorities, Mexico's performance, at the national level, could continue to stagnate.

Sonora's plan for improvement is analyzed next, since this state stands out of the 29 that participated in PLANEA in 2017, with an increase closer to 30 points, 29 points in Spanish and 27 points in Mathematics. No other state had increments of such magnitude, and Sonora achieved it in both subjects. This transition is particularly remarkable, because in less than 2 years, Sonora improved from being among the lowest performing states in 2015 (27th place, out of 28 that took the test) to being above the national mean score in 2017. These results were not accomplished by chance. They are the result of a very well-devised plan, developed by the local authorities and carried out by the school districts and the schools, through the 2016–2017 academic year. This plan had the full political support of Sonora's governor, who led a wide communication campaign to bring on board Sonora's society.

⁴⁷The four states controlled by CNTE did not take the test (INEE 2018).

All 9th grade students, as well as their teachers and principals, received a letter from the state's secretary of education inviting them to give their best effort and explaining the personal and social benefits of doing so. A reinforcement program was also put in place for the 122 secondary schools which had the lowest performance in PLANEA 2015. To identify students' weaknesses, all 9th graders sat for a diagnostic evaluation; and, to assess the progress of the strategy, another test was given halfway through the academic year. Additionally, PLANEA's sample was expanded to include all 9th grade students. There were also three types of in-service training: (1) Innovative teaching and learning workshops for teachers from targeted schools; (2) School management workshops for principals of targeted schools; and (3) A general workshop about the PLANEA strategy for the staff of all secondary schools. Specific educational materials, for students and teachers, were produced: workbooks for students (392 exercises); teachers' guide (with pedagogy and 900 exercises); 100 videos⁴⁸ and 64 content presentations for facilitating face-to-face sessions. An important aspect of the plan was the follow-up visits to the schools by local authorities. There were nine follow-up teams visiting the schools, located in the seven regions of the state (Mexico's second largest, with an area of 70,000 mi²), offering their support to teachers and principals, as well as meeting with parents. Each team had a leader and two support members. The leaders were high-level administrators responsible for the operation of secondary schools.

Another issue that deserves a closer analysis with regard to local authorities' policies is the relation between inequality and learning outcomes. Too often poor learning outcomes are exclusively explained as a causal effect of social inequality. But, as De Hoyos' (2018) studies and others' have demonstrated, income is not the only, nor necessarily the most decisive, factor to account for poor learning outcomes. For instance, in 2015, Nuevo Leon –the state with the highest GDP in Mexico⁴⁹– was just above the mean national score, with 502 points in Spanish and 501 in Mathematics. In contrast, that same year, Puebla –a state with a 59.5% poverty rate and almost a third of Nuevo Leon's per capita income– was at the top of the table, in first place, with a score in Mathematics of 527 points. Two years later, Puebla increased six points to score 533 and secure the first place; whereas Nuevo Leon dropped down seven points in Mathematics and four points in Spanish, to worsen its already mediocre outcome. The inertial impulse of a state, like Nuevo Leon's, whose education once stood out, is not enough to stay at the top. And its GDP, however high, is also not sufficient to guarantee an outstanding result. On the contrary, the implementation of specific policies and strategies matters more. The difference between Puebla's significantly better learning levels than those of Nuevo León is mainly explained by.

[...] the educational policy carried out by Puebla during the last 6 years where the students' learning was placed at the center of the educational system. [...] Those

⁴⁸The videos can be accessed at: <https://youtu.be/wJn36dh7SIU>

⁴⁹Nuevo Leon is the Mexican state with the highest GDP, without considering oil extraction (INEGI 2017).

schools that had the lowest levels of achievement received technical assistance and mentoring from supervisors and the local educational authority. The schools carried out a plan whose main objective was to improve learning outcomes. All this had a significant impact on the learning of Puebla's children, regardless of their income level. (De Hoyos 2018).

These data, therefore, substantiates that if more local education authorities recognize their role in implementing consistent and continuous pedagogical strategies to improve student learning outcomes, Mexico's educational landscape, as a whole, will be transformed faster, as has occurred in other countries.⁵⁰

5.7.4 *The Impact of Longer School-Hours on Learning*

The 2013 amendments to the Constitution did not cancel policies that were being successful, on the contrary it often reinforced them. A good example is the federal program aimed at extending school-hours, called *Full-Time Schools*. It was created in 2007, 5 years before the reform started, because most children in Mexico have a very short school day, of only 3 h in preschool and four and a half or five hours in primary. In contrast, full-time-schools have school days of 6–8 h. As part of the reform policies, SEP expanded, strengthen and consolidated this program by increasing the number of schools (from 6700 in 2012–2013 to 25,132 in 2017–2018.25); introducing good practices to make quality use of the extra school-hours; and reorienting the program to the areas where it was most needed, especially to indigenous, rural and multi-grade schools in order to curb inequality (Treviño and Velasco 2018). Besides extending the school hours, these schools received federal funds to: (a) provide technical assistance for bolstering school management skills; (b) acquiring relevant educational materials; (c) organizing school sports and culture activities to boost social interaction; (d) paying staff extra hours; (e) improving schools' infrastructure; and (f) supplying food service, particularly in schools located in extreme poverty contexts.⁵¹

Since the 1980s, the extension of the school day is a recurrent policy across the world⁵² to care for children in vulnerable sectors. This policy is based on the idea that better school resources, such as more instructional time and access for students

⁵⁰ Poland provides a good example of how investing on regional development has an impact at the national level. And particularly the role that education plays in such development, World Bank (2017). See Chap. 7.

⁵¹ In over 13,000 full-time schools, more than 1.5 million students eat a full meal every day. Also, 20 thousand students have access to a full breakfast provided by The National System for the Integral Development of the Family (DIF). Thus, the food services have become an important asset for students' health, attendance and permanence in school. They have also helped forming stronger bonds among the families, since mothers often participate in cooking the school meals, using the federal resources that full-time schools receive for feeding students. See Treviño and Velasco (2018).

⁵² For Latin America, see studies on Chile (Arzola 2010; González and Paz 2010), Colombia (Hincapié 2016), and Uruguay (Llambi 2014).

and teachers to more educational materials, will increase the number of hours of effective instruction and thus students' academic performance will improve. There is evidence from a number of national and international studies about how extending the learning hours of the school day can indeed have a very positive impact on the quality of learning, particularly among pupils from less prosperous contexts.⁵³ A longer school day has also been linked to other positive indicators, such as lower teen pregnancy and juvenile crime rates.⁵⁴

One of the most important results of this program is that the students attending full-time schools performed better academically than their peers in similar schools, using various standardized tests and indicators. The World Bank reports that the results of the evaluation show:

[...] Strong evidence about the positive effects of the program on the learning outcomes of elementary school students and [...] that the effects of the program are maintained over time and they have a greater differential effect for students in vulnerable and highly marginal schools. (Silveyra et al. 2018).

The results also revealed that increasing the school day and other resources received by full-time-schools has dynamic, longstanding effects. The schools in the poorest areas showed a greater reduction in the number of students in the lowest levels of Mathematics and Spanish performance, as well as in other indicators, like attendance, failure and school dropout rates. There have been substantial investments to keep these schools running. Hence, one of the greatest challenges Mexico faces is to find the resources to extend the school hours and convert every school into a full-time-school.

5.8 The Challenges Ahead

The education reform presented in this chapter was embedded in a set of eleven larger structural reforms which were introduced by the federal government with the intention to modernize Mexico. What mainly triggered the reform were the well-known low levels of performance and inequality in educational outcomes, documented by national and international assessments. The policies advanced by the reform were well grounded in two public consultations (2014 and 2016). Such policies included an extensive and solid curricular reform (0–3, PreK-9 & 10–12) with a definite focus on developing twenty first century skills. The objective of making education truly relevant to face the needs of the knowledge society is central in all key reform documents. The new curriculum offered more autonomy to schools and had a clear emphasis on learning outcomes and teaching skills.

It is true, that the final version of the twenty first education goals, the NME and the new curriculum were not published until 2017, more than 3 years after the

⁵³ See for instance: Cabrera (2015), Padilla (2016) and Cabrera (2018).

⁵⁴ See Berthelon and Kruger (2011).

constitutional reform was passed and with only 14 months of the federal administration left. Furthermore, the universal implementation of the curriculum in schools did not start until August 2018, with only 15 weeks left. But, as former education ministers (Nuño 2018 and Granados 2018b) have argued, in the case this reform, its initial conditions clearly influenced the strategy adopted by the government: it was imperative to address first the political relations with the union and to fully recover the leadership of the education system, before outlining the NME and defining the twenty first century goals and the new curriculum. This political operation took longer than it would have been desirable, but by the first semester of 2017 most policies of this ambitious reform were already in place, with not enough time for a single federal administration (with a six-year term) to implement them.

It is also true that some of these policies have developed and taken root better than others. Despite training over one million teachers, during the 2017–2018 academic year, the biggest challenge continues to be the transformation of teaching practices to comply with twenty first century goals and curriculum standards, particularly in the more economically deprived areas. Initial and in-service training of teachers are in need to be improved much further. Also, the technical assistance service to schools has advanced more at the regulatory level than at the practical one, and hence it is still in need to be fully implemented, in spite of having trained 100% of supervisors; which is a necessary but not sufficient condition for ensuring the evolution of schools into becoming learning organizations.

Also, building a new governance structure for the education system, although being one of the main objectives of the reform, was not fully developed by it, and it remains as one of the reform's great pending issues. On the one hand, if the reform was to succeed, the State needed to regain full control of the education system and, for political and strategic reasons, it had to be done at the outset of the administration (Nuño 2018). Thus, the chosen method to break the bureaucratic-institutional inertia was to significantly modify the country's legal framework in order to shift the political, administrative and financial processes of the educational apparatus. On the other hand, this top-down approach –however necessary– had the negative result of the educational reform not being embraced by everyone, particularly not by those whose vested interests were severely affected. Thus, the political opposition took advantage of the discontent among dissident teachers' groups and *canceling the educational reform* became one of the main campaign promises made by the candidate who won the 2018's presidential election.⁵⁵

Thus, the greatest challenge forward, for the success and sustainability of the reform principles –i.e. to ensure quality education with equity for all Mexicans– is to build a model of education governance, through a more bottom-up approach. A governance where:

⁵⁵ <https://www.eluniversal.com.mx/elecciones-2018/lopez-obrador-promete-cancelar-reforma-educativa>

Flexibility, horizontal interaction between various actors, transparency and co-responsibility are the most outstanding features, [...] but such governance –to which we aspire– must be constituted from the base of the educational system itself. (Granados 2018b).

Despite two very large public consultations, the reform design and implementation were deemed, by many, as a top down process. And indeed, some teachers wished they had more opportunities to participate in the construction of the reform. But, since political concertation took up much of the administration's efforts, there was not enough time left to promote a more bottom up approach which might had been better for the wide acceptance of policies, but which would had also been more time consuming. And time was unfortunately scarce.

Political timing often clashes with technical effectiveness. The less politicized a reform, the more chance it has to consolidate its goals with technical rigor. Thus, it is a well-known fact that long policy cycles are necessary, because real transformations do not occur overnight. And also, because such transformations need time to permeate well through the system and be widely accepted, understood and embraced by all its stakeholders. However, in Mexico's case, continuity might be the biggest challenge of this reform.

Education in Mexico is not so much a State policy as a governmental one. Hence, its aims tend to shift with each presidential term. In this instance, the ruling party (PRI) lost the 2018 election to a recently created party (MORENA). MORENA's narrative on education left out the objective examination of facts pertaining the reform, the concrete advances it had achieved, the hard data on which such advances are based, as well as the high approval rate in opinion polls that the reform consistently had, from 2012 to 2018 (Granados 2018a). A narrative constructed mostly to please its political allies –like CNTE– much more political than objective.

Thus, as part of his presidential campaign, the current president promised to reverse the educational reform and, in May 2019, a new constitutional reform was introduced with the aim to roll-back the educational policies of the previous government. The three education acts that were enacted in 2013 are currently being discussed in Congress and therefore the fate of individual policies remain as if yet unknown. Appraisals were eliminated from the constitutional text and teacher initial and in-service training have taken its place. This constitutional reform dismantled INEE and a new organization –which shall promote teacher training– has taken its place, keeping some of INEE's original personnel and part of its budget. It has a governing body newly appointed by the Senate. Until the legislative process for the enactment of the new education acts is complete, it is uncertain how much power will be reverted to the teachers' union and what reform policies will carry on. It is problematic to make accurate predictions, because the last few months have been flooded with opportunism and demagoguery.

Let us hope, educational researchers, education faculties, civil society as well as local authorities, who have been working hard at implementing the main reform policies and who could also be held accountable for the students' academic performance would question the reversal of many reform policies. Public opinion, who

was so favorable to the 2012 reform and to curbing the union's power, might also oppose reinstating the corrupt arrangements that were in effect before 2012. As a former education minister pointed out (Granados 2018b), in the past, education policies were basically the result of doing what was possible, but the 2012 reform set out to make possible *what it was necessary*. And I would add that a great part of *what it was necessary* was to transform Mexico's education system into a high performing system, which this reform indeed set out to do. Although it must be said, it is not, by any means, a reality yet. But at least, this reform did lay very solid foundations on which to continue erecting such a system. Hopefully, the current federal government will not destroy such foundations and, on the contrary, will find ways to build upon them, just as the 2012 reform built upon those past policies which were yielding good results.

Optimistically, the new education officials might appreciate that, if schooling needs to be about universally endowing students with twenty first century skills and thus bringing about equity for all, the policies described in this chapter require time to consolidate. They might also recognize that such policies need to be backed up by a broad social consensus, an accord based upon the assumption that all citizens understand and support why –as I stressed, in the words of Lomnitz, at the beginning of this chapter– *education truly matters*.

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