The Education System of Mexico

Inequality, Standardization, and Compensation

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Abstract

This contribution outlines the historical development of the Mexican education system, presents an overview of its institutional and organizational structure since 1921, and discusses selected educational trends. The chapter argues that throughout the twentieth century, the system struggled to catch up with a dramatically expanding population that was divided by enormous social, economic, and cultural inequalities and that a number of contingent mechanisms were devised in order to standardize unequal growth in different areas and compensate for social and economic problems that schooling per se could not resolve. It will be

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shown that the divides between indigenous/rural and urban populations, men and women, regional and central educational traditions, among other factors, were only to an extent ameliorated by a more or less centralized educational system that unified administration, curriculum, and school textbooks. It will be analyzed how the very expansion of the system created further divisions: teachers belonging to different jurisdictions (the central state or each federal state), disparities between state-funded and nonstate funded institutions, and a stratification of educational options for an increasing demand, in particular in upper secondary and tertiary education. The analysis of the 1990s political reforms tending towards de-centralization, de-regulation, and accountability will show how the way in which the funds for education were allocated changed, especially regarding the new weight given to evaluation – schools and teachers had to be evaluated in order to compete for resources – which further increased inequalities between schools in marginal contexts and those in more socially privileged ones. At the same time, since the 1990s, direct cash transfers from the government to families with school aged children generalized throughout the country as a compensatory mechanism to the pressing social factors that lead to school dropout.

Keywords

Mexican education system · Inequality · Standardization · Compensation mechanisms · Centralization

1 Historical and Social Foundations

1.1 General Historical Background

Before the Spanish conquest (1521), the territory that is today Mexico was inhabited by a plurality of peoples. Most of them (in the center and south) coalesced around the Mexica (Aztec) empire, a complex and centralized civilization with highly differentiated education structures for the different strata of society, structures that were totally destroyed by the violent conquest. Education during the three centuries of Spanish domination first focused on the Christianization of the indigenous population, but by the eighteenth century it was promoting a more general schooling controlled by the local authorities, both in indigenous and nonindigenous settings, meant to instruct reading, writing, and religion. There were also several institutions of semi-clerical, secondary education, and one University in Mexico City.

Following independence in 1821, under the new Mexican republic, education was a matter of jurisdiction of each federal state. Primary education remained in the hands of the municipalities, new institutions of secondary education (*colegios* or *institutos literarios*) were founded (Ríos Zúñiga 2002), and the University was subject to several reformation attempts in an effort to fence the influence of the powerful Catholic Church (Alvarado 2009). After decades of civil unrest and foreign invasions, in the last third of the nineteenth century, the national state was

consolidated upon liberal bases that separated the Church from the civil and governmental spheres, and promoted the formation of homogeneous educational institutions across the country. Control of primary schooling was transferred from the municipalities to the governments of the federal states, primary schooling was decreed compulsory first in the capital of the country (1891) and then elsewhere, and the teaching of religion was banished in the government-funded schools of Mexico City. Professionalization of teachers began with the creation of 45 normal schools throughout the country, and the National University was re-founded with a new structure in 1910. A new Constitution was approved in 1917; it established that all state-funded education should be laic (secular), which entailed the prohibition of teaching religion in public schools throughout the country; it also limited the provision of schooling by religious congregations. Since then, the terms "public schools," "official schools," and "government-funded schools" have been indistinctly used to refer refer to schools provided by the state which may or may not be totally free of charge.

In the aftermath of the violent social and agrarian revolution of 1910–1920, a new Ministry of Public Education (*Secretaría de Educación Pública,* SEP) was established in 1921, a date which can be considered the foundation of the present education system. SEP was created with a large number of attributions: whereas urban, primary schools remained in the hands of the federal states, SEP was to rule over all primary rural education, the newly created lower secondary schools and a number of normal schools, as well as other art and archeology schools and museums. The SEP's penetration throughout the country in the years 1921–1940 (largely through the "ruralization" of many existing schools and the creation of new ones), accompanied by processes of negotiation and adaptation of schooling, contributed to the construction of the new postrevolutionary state, and articulated the bases of the relationship between the national government and the local and regional authorities (Rockwell 1994, 2007). This way of proceeding also created a deep divide – which persists today – between the schools belonging to the "federal system" (i.e., the SEP), and those belonging to the different state systems, since the two types of schools had different conditions especially in terms of teachers' salaries and conditions of work. In this period, the number of secondary schools rose, and the government created the National Polytechnic Institute as a higher education center alternative to the National University, offering technical degrees at the secondary and tertiary level and opening facilities for children from working class families.

Education during the 1930s was advocated as a means to social transformation, at all levels. Advanced by President Lázaro Cárdenas (1934–1940), a reform to article 3 of the Constitution stated that education should be "socialist" – which in reality meant rational, science-based, nonreligious-oriented education. Rural teachers were given the task of promoting the government program of agrarian reform and empowering peasant communities. A conservative turn in the following decade targeted education for the service of "national unity" (the term "socialist education" was removed from the Constitution). However, the social and political representations of education from the 1930s had long-lasting consequences, especially among teachers trained in the rural normal schools of that decade, who developed a highly

politicized awareness of the problems of the poor countryside, and some of whom later formed communist associations or even joined the guerrillas of the 1960s (Civera Cerecedo 2008).

The first general law of education was issued in 1939, legalizing what SEP had, de facto, built since 1921. The law was later reformed in 1942, 1973, 1993, and 2019, with changes related to rhetoric, allocation of teachers and ways of teacher promotion, share of managing duties between SEP and the federal states' education ministries, increase in the number of years of compulsory schooling, and expansion of the definition of the right of the people to education. However, those changes did not fundamentally altered the basic structure of the Mexican education system laid in the 1920s and 1930s.

The National Educational Workers Syndicate (*Sindicato Nacional de Trabajadores de la Educación*), SNTE, was founded in 1943, bringing together a plurality of teachers' organizations. As the education system was expanding, the transfer of teachers to the federal states and their distancing from the SEP itself gave SNTE much power as the organization that gathered almost all the teachers in the country. As it was the case with many other national unions, SNTE was the only valid interlocutor between the teachers and the state, and it acquired vital functions for the education system that have remained until today, such as the appointment of teaching positions, promotions, changes of workplace, and the negotiation and administration of social security benefits (Arteaga 1994).

In the years 1940–1970, the urbanization and industrial development of the country was paralleled by the consolidation of a semi-democratic political regime centered around one single, official party (*Partido Revolucionario Institucional*, PRI), which operated in a clientelist and corporatist way. Whereas the Mexican population grew exponentially from 15 million in 1910 to 36 million in 1960, and 50 million in 1970, the education system strove to come accommodate, but it was always falling behind. By 1960, three million children were not schooled. An ambitious "Eleven-Year-Plan for the Improvement of Primary Education" was put in place from 1960 to 1971. The plan managed to triple the number of places for children in primary school, largely by creating two shifts of school attendance per day, morning and afternoon, which cut by 42% the time each student spent at school and allowed teachers to work two shifts. However, population growth exceeded estimations and by 1971, another three million children were out of the school system. Moreover, one outcome of that plan was the development of regional inequalities in terms of educational offer: whereas the poorer federal states (especially in the south) managed to expand enrollment in primary school, the richer ones (mainly in the north), which already had a good provision of primary schooling, developed in this period their secondary and tertiary education systems, accentuating regional differences in the industrial development of the country (Muñoz Izquierdo 1973). These differences persisted for decades but have significantly lessened in the past fifteen years, since lower and upper secondary education were made compulsory in 1993 and 2012, respectively, at the national level.

Simultaneous to the "Eleven-Year-Plan," in 1959 the central government launched a program of production and distribution of standard textbooks for primary

school, handed over free of charge to all students of the country in both public and private schools, the use of which was decreed compulsory and exclusive (in public schools). The aim of the *Libro de Texto Gratuito* program was to make textbooks available to all in order to guarantee the free character of education – considering that only a small fraction of the school population had access to any kind of textbooks, by then rather expensive books – and to provide a clear, uniform curriculum and teaching guide for the often ill-trained teachers (Roldán Vera and Quintanilla 2020). The program, which is still in place, has extended to lower secondary schools (whereby the government authorizes a number of commercially produced textbooks and then distributes them free of charge to all state schools); textbooks are also produced in Braille. Specific textbooks for indigenous (bilingual) and community schools are also produced by the central government, attending the specific curricula of those modalities. In general, standard textbooks have succeeded in providing a common curriculum throughout the country, but their quality has not been constant and they have created wide controversies at different points in time. At present, whereas private schools are allowed to use additional, commercial textbooks, children in public schools only have the official ones.

The economic growth of the country in the period 1940–1970 was matched neither with policies of income distribution nor with a democratization of the political system, which contributed to the massive workers' and students' mobilizations of the 1950s and 1960s, accentuated by the international tensions and rhetoric characteristic of the Cold War years. The violent repression of such movements, epitomized in a massacre of students on 2 October 1968 in the Tlatelolco square in Mexico City, led, among other things, to a significant loss of legitimacy of the ruling party. Repressive policies remained to an extent while some student groups joined the guerrillas that were forming in different parts of the country and the government under President Luis Echeverría (1970–76) embarked on a major educational reform with the intention of restoring the challenged legitimacy of the state party. The reform, catalyzed by the new 1973 general law of education, was involved in an unprecedented expansion of upper secondary and tertiary education offer, the incorporation of many social leaders in the education sector (in the expanding university system or in the SEP itself), and the production of a new generation of official textbooks that adopted some of the leftist social views of the time. All this was possible thanks to a significant amount of money coming from foreign debt and an increase in highly priced oil exports.

In the 1970s, primary schooling continued to expand, but coverage was still far from universal. In 1971 SEP created the *Consejo Nacional de Fomento Educativo* (CONAFE) to provide primary education, by means of instructors, in little-populated, marginal rural and indigenous communities where regular schools could not be established. At the same time, SEP developed new modalities of lower and upper secondary schools, especially with a technological orientation, conceived of as terminal degrees, intending to enroll students from working class backgrounds (Villa Lever 2010). In 1969, as part of the repression to student mobilization 15 (out of 29), normal rural schools were transformed into *Escuelas Secundarias Técnicas Agropecuarias*. *Tele-secundaria.* A program of lower-secondary schools

supported by TV broadcasting in rural areas where the number of teachers was insufficient was launched in 1968, and it is still important as of today. With government input, but also thanks to the emergence of several private institutions, university coverage grew from 6.4% in 1970 to 14.5% in 1980 (Tuirán and Muñoz 2010). In 1985, teacher training became a tertiary degree, which could be studied in the existing normal schools and also in the National Pedagogical University, founded in 1978.

The fall of the international oil prices, excessive foreign debt, and high inflation rates led to a severe crisis and consequent economic contraction in the 1980s. The gross domestic product (GDP) percentage for education decreased drastically and all state-funded education levels stopped expanding – yet they continued doing so in the private sector. Salaries of teachers and academics fell to their lowest level. Social unrest, stirred by the poor government response to the earthquake on 1985, September 19th, as well as the fraudulent 1988 elections, contributed to set the context for the relative democratic turn of the following decade.

A series of reforms implemented in the 1990s gave the Mexican education system some new features that still prevail today. That decade was characterized by policies of state reduction – involving privatization of state enterprises and de-centralization of social services – de-regulation, and openness of the market. Following international trends set by the World Bank and the International Monetary Fund, and favored by a relative deceleration of demographic growth, reforms in the education system were oriented towards de-centralization and accountability. Through a pact signed between the SEP and the powerful Teacher's Syndicate (SNTE), the *Acuerdo Nacional para la Modernización de la Educación Básica* (1992), and a new general law of education (1993), SEP transferred to the federal states' governments the administration of primary, secondary, and normal schools; however, SEP retained key functions such as the financing of schools, payment of teachers (via money transfers to the governments of the federal states), curricular design, production of primary school textbooks, and the evaluation of teachers throughout the country (Arnaut 2010). Under such parameters, de-centralization turned out to be rather superficial. Moreover, a restructuring of labor relations, nation-wide policies of teachers' evaluation, and curriculum standardization in the 2000s, followed by a 2013 take up of the payroll of teachers by the SEP, signaled a process of re-centralization of the education system (Olmeda and Armesto 2017), which continues in the present government of President Andrés Manuel López Obrador (2018–2024).

In terms of accountability, since the 1990s the Mexican government has put in place policies of measuring national standards in primary and secondary schools. The assessments of the Organisation for Economic Co-operation and Development (OECD)'s *Programme for International Student Assessment* (PISA) were introduced in 2001 and in 2006 were the so called "National Assessment of Academic Achievement in Schools," ENLACE (*Exámenes Nacionales del Logro Académico en Centros Escolares*) were generalized in primary schools. In 2015 ENLACE was replaced by the "National Plan for the Evaluation of Learning," PLANEA (*Plan Nacional para la Evaluación de los Aprendizajes*), applied to the last grades of primary, lower, and upper secondary schools. Although intended for assessment of

the overall Mexican education system, these standard exams have served to evaluate teachers and to create nonofficial rankings of schools.

Continuous evaluation of teachers has been seen as a way to guarantee teaching quality in the past three decades. Voluntary programs of salary compensation – individual achievement-related economic stimuli that are not pensionable and are subject to federal budget – were introduced in the late 1980s and early 1990s as a temporary measure to alleviate dropping salaries at all levels of the education system, from primary school teachers (*carrera magisterial*) to university professors (*Sistema Nacional de Investigadores*, as well as several productivity programs internal to each university). These programs have become permanent, whereas salaries have been kept relatively low, never recovering to the level they had in the early 1980s. Such programs have created notable inequalities among teachers and professors, as working and infrastructure conditions that favor or deter individual academic performance vary throughout institutions and across the country (Sánchez Cerón and del Sagrario Corte Cruz 2004).

The diversity and varied quality of secondary and tertiary institutions that had grown out of any central plan in the 1970s and 1980s was dealt with by means of the introduction of a system of standardized entry and completion exams designed and implemented by the *Centro Nacional de Evaluación para la Educación Superior* (Ceneval), founded in 1994 (Martínez Rizo and Blanco 2010; Villa Lever 2010). As will be shown later, one outcome of these standardized entry exams is that they allocate low-performing students to lower quality, less demanded institutions, which deepens prevailing social inequality.

The tertiary level has expanded consistently in the past two decades. The traditional national and federal state universities still take in the largest number of students yet they have not substantially increased their intake. Instead, new institutions have been created for the pressing demand, which tend to offer shorter-duration degrees and an orientation to the labor market: technological institutes and universities since 1992 (Tuirán and Muñoz 2010), polytechnic universities, intercultural universities (where teaching is conducted in indigenous languages and attending the needs of indigenous communities), and, more recently, since 2019, the so-called "Welfare Universities" (*Universidades para el Bienestar Benito Juárez*) created by the central government in very low-income, relatively isolated communities.

From 1960 to the present, the Mexican education system has expanded and diversified on a massive scale. During that time, the population moved from an average schooling of 2.6 years in 1960 to 7.5 in 2000 to 9.4 in 2017. By the early 2000s, the demand for primary schooling was covered, and by 2015, demand for secondary education was covered as well. However, as will be shown in the following sections, the expansion of the system has coincided with significant inequalities in terms of school quality, infrastructure, opportunities provided by the different types of schools, and considerable disadvantages for rural and indigenous populations.

1.2 Political, Economic, and Cultural Contexts and Conditions

Mexico is a country of 1,964,375 square km, inhabited by 119 million people, 77% of them living in urban areas (INEGI 2015). The official language is Spanish, whereas seven million people speak 68 indigenous languages (INALI n.d.). The location of Mexico between the parallels 14 and 32 of the northern hemisphere (area of tropical, temperate climate), coasts to both the Pacific and the Atlantic Oceans, and two chains of mountains that cross the territory from North to South, give the country a great diversity in terms of climate, biology, and culture.

Mexico is a democratic, representative, and federal republic, formed by 31 states and the capital, Mexico City. After a 70 year semi-democratic, single-party political regime, since 2000 there has been significant political alternation between the PRI, the right-wing Partido Acción Nacional (PAN), and the center-left parties PRD (Partido de la Revolución Democrática) and Movimiento de Renovación Nacional (Morena). The latter had an overwhelming victory in the presidential and congress elections in 2018 and president Andrés Manuel López Obrador is due to remain in office until 2024.

The Mexican economy is mainly oriented to oil and manufacturing exports, 85% of which go to the USA in virtue of the North American Free Trade Agreement, or the United States–Mexico–Canada Agreement since 2020. Mexico's GDP (USD 1.21 billion in 2018) is the second largest economy in Latin America after Brazil (IMF 2018). Agriculture, fishing, and forestry provide 3.3% of the GDP; construction, extractive, and manufacturing industry (especially assembly industry) make 31% of the GDP, and 60% derives from the service sector (INEGI 2020). Whereas around 1.5% of the GDP comes from oil revenue (BM 2017), personal remittances (96% of them from the USA) account for 2.8% of the GDP (BM 2019). It is important to note that whereas the per capita GDP is 44% of the OECD average (USD 17,315), Mexico spends around 31% of the OECD average on basic education – that is, USD 27,848 per student between ages 6 to 15 years (OECD 2014).

Unemployment amounts to 3.2% of the economically active population (EAP). However, 56% of the EAP work in the informal sector (INEGI 2020), which clearly impacts on the low fiscal revenue of the Mexican State, 16.2% of the GDP in 2017 (the lowest of all 36 OECD members), contrasting with the average of 23.1% for Latin America (OECD 2019b).

In spite of being a relatively large economy, 43.6% of the Mexican population live in poverty – 44 million in moderate poverty and 9.4 million in extreme poverty (CONEVAL 2018). Around 75% of the indigenous population live in extreme poverty (CONEVAL 2010). In terms of income distribution, Mexico is a highly unequal country, with a Gini index of 48.2, behind other countries in the region such as Argentina, Bolivia, or Venezuela (World Population Review 2020). The 2020 Covid-19 crisis, which pushed the entire teaching activities to home, Internet-mediated learning, evidenced that almost half of the entire population did not have connectivity at home.

1.3 Social Conditions: Provision/Coverage of Population

In 2018–2019, a total of 36.6 million students enrolled in the entire education system, 25.4 million of them in basic education (preprimary, primary, and lower secondary education) attending 233,000 schools. Some 808,000 indigenous children attended 10,000 primary schools with a multicultural and bilingual system (INEE 2018). 49% of the primary schools in the country were multigrade, that is, they did not teach all six grades as separate classes because since they are located in rural, little populated areas, they had few students and few teachers (Juárez et al. 2015). These schools are attended by 16.3% of the primary school population (SEP 2019).

In spite of the level being compulsory, only 71.8% of the population aged 3–6 years were enrolled in a preprimary program in 2018–2019 (SEP 2019). Differences in enrollment are not significant in the rural/urban divide yet they are significant between regions – only 44% of children are enrolled in the northwest of the country vs. 77% in the center (UNICEF 2015). Enrolment in preprimary education is more common in high income families (71%) and less common in poorer families (58%) (UNICEF 2015).

Although there is universal coverage for primary and lower secondary school, the net school enrollment for primary education was 98.4% of the population aged 6–12 years in 2018 (INEE 2018), whereas the net school enrollment of lower secondary education was 84.4% in that year (SEP 2018a). *Telesecundaria* covers 21% of the lower secondary education demand (SEP 2019).

Upper secondary education became compulsory in the academic year 2012–2013. In 2017, it covered 62% of the population aged 15–18 years (5.1 million students), a significant increase compared to 36% in 2001 (INEE 2018). Out of those enrolled in upper secondary education, 8% attend an online or long-distance program (SEP 2019). In 2013, a *Telebachillerato comunitario* was launched, an upper secondary education for small communities supported by TV broadcasting, modeled on the *Telesecundaria*; at present, *Telebachillerato* services around 150,000 students (2.8% of the upper secondary education population) (SEMS 2019). 5.1% of the entire student population in 2018–2019 were enrolled in a vocational education program.

Tertiary education (*educación superior*) covers about 39% of the population aged 18–23. Enrollment in tertiary education is growing faster than at any other level: it went from two million in 2000 to 4.4 million in 2018 (7.6% of them in the postgraduate level) (SEP 2019). 16% of all students in tertiary education are enrolled in an online or long-distance program, a fast-growing modality in the past 15 years (Tuirán and Muñoz 2010).

There is an almost equal ratio of men and women at all educational levels. Women slightly outnumber men in upper secondary and tertiary education: of the 249,561 students enrolled in tertiary education in 2018–2019, 129,276 were women and 119,835 were men (UIS 2019).

In 2017, the average duration of schooling for the Mexican population was 9.4 years but in that year 4.4% of the population older than 15 years was unable to read and write (SNIE 2017). The overall efficiency of the Mexican education system is as follows: in the period 2002–2019, out of 100 students who started primary

school, 92 finished it; 88 started lower secondary school and 73 finished it. Given these 73 students, 66 progressed to upper secondary school and 7 to technical education – but only 46, respectively, finished the respective modalities. Of the 46 who finished upper secondary education, 35 started and 24 finished tertiary education (SEP 2019).

There is public and private provision of education at all levels, but the large majority of education is public, that is, offered by institutions ran with resources from the national government (directly or through the SEP), the federal states' governments, or the municipalities. In 2018, the overall education expenditure was 6.9% of the GDP (USD 83.5 million); of that, only 1.52% was from the private sector (INEE 2018). Private funding is higher in the extremes of the system, that is, in early childhood and tertiary education. In the school year 2018–2019, 39% of all early childhood education pupils were enrolled in public centers, as well as 84.1% of students in preprimary schools, 90.2% of primary school students, 90.7% of lower secondary school students, 81% of upper secondary school students, and 70.3% of tertiary education students (SEP 2019). Unlike in other Latin American countries (Chile, Brazil), the increase in tertiary education enrollment has taken place mostly in the public sector (Tuirán and Muñoz 2010). The only subsidy the government provides to private education is by means of tax reductions to parents paying school fees for their children. There is virtually no private participation in either in indigenous and community schools or in technical secondary schools, *telesecundarias* or *telebachilleratos* (INEE 2018).

1.4 Transition to Labor Market

Given a total population of 119 million inhabitants, the economically active population (EAP) of Mexico amounts to 57.3 million, out of whom 30.6 million are young people (that is, people aged 15 to 29 years, (INEGI 2020). In 2019, the conditions of the young people were estimated as follows:

	Women (millions)	Men (millions)
Only study	4.3	4.2
Study and work	0.5	0.8
Only work	4	7.8
Not in employment, education, or training (NEET)	6.8	2.2
Total	**15.6**	**15**

Source: Data from Díaz (2019)

The gender difference in terms of those who only study or those who combine study and work is minimal; however, women are at a considerable disadvantage regarding access to full employment and with respect to opportunities to work or study. This has been explained both by cultural patterns (women in most cases are in

charge of domestic chores and take care of young children, elderly, sick, and disabled members of the family) and by the macroeconomic environment.

The transition from school to labor market is not a linear process, but it entails combinations of work and study, study and being in search of a job, getting in and out of the labor market, as well as in and out of the education system. In 2015, the age at which 50% of young people left the school system was 16.1 years for men and 17.1 for women. In that year, the transition from school to a stable job, calculated as the time it takes to 50% of young people to be employed after leaving school, was 2.7 years for men and 6.6 years for women (CEPAL/OIT 2017).

The quality of the first job is problematic. In Mexico, 46% of the people aged 15–29 are employed in a low-productivity job (the mean for Latin America). Those who spent the lowest number of years in school hold 60% of the low-productivity jobs, with virtually no difference in the job quality between those who only finished primary school (6 years) and those who completed lower secondary school (9 years) (Gontero and Weller 2015). More than 60% of the people aged 15–29 years do not have a permanent contract (Gontero and Weller 2015). Whereas this is more common in the age groups of 15–19 years (less than 10% have a permanent contract) and 20–25 years (less than 30% have a permanent contract), there is no significant increase in the percentage of contracted jobs in the age group 26–29 (2%), which indicates the difficulties young people have to acquire permanent, stable jobs.

2 Institutional and Organizational Principles

2.1 General Principles

The foundations of the Mexican education system are laid in Article 3 of the Constitution and in the General Law of Education of 2019 (Cámara de Diputados del Honorable Congreso de la Unión 2019).

Both documents state that every individual has the right to receive education and that the State (comprising the Federation, the federal states, Mexico City, and the municipalities) will provide education at the preprimary, primary, lower, and upper secondary levels. All education provided by the State shall be universal, inclusive, public, free of charge, and laic. The entire education system is to have an intercultural approach. Education shall promote the harmonious development of all human faculties, love for the fatherland, respect for human rights, and international solidarity upon a basis of independence and justice. The education provided by private individuals or organizations that have an official accreditation is also subject to the supervision of the State and is considered a public service.

Preprimary, primary, lower secondary, and upper secondary education (15 years in total) are compulsory. According to fraction 10 of Article 3 of the Constitution, the State is obliged to provide higher education – that is, it must design policies that favor the inclusion, permanence and continuity as well as provide the means to facilitate access to students to higher education as long as they comply with the entry requirements of the tertiary education institutions. Early childhood education

development (ages 0–3) is not compulsory but, according to those legal instruments, the State shall promote it.

2.2 Education Administration and Governance

SEP is in charge of planning, coordinating, and operating basic education (pre-primary, primary and lower secondary education) both at the national and at the state levels, as well as some modalities of upper secondary and tertiary education. Around 70% of the state-funded, basic education schools (including indigenous and community schools) belong to the national (federal) system and the rest to the education system of the different states. Community education (from early childhood to lower secondary) in marginal, little-populated rural and indigenous areas is provided by CONAFE, a decentralized organ of SEP.

Since the 1990s, the federal states' governments have been in charge of administering the primary, secondary, and normal schools dependent from SEP as well as the many units of the National Pedagogic University, but SEP retains key functions such as the financing of schools, the teachers' payroll (via money transfers to the governments of the federal states), curricular design, production of the official primary school textbooks, approval of lower secondary school textbooks, and the evaluation of teachers throughout the country (Arnaut 2010). In the past decade, there has been a tendency to re-centralize the administration of those schools, as accusations of corruption and misuse have been common regarding the money transfers from the central to the federal states.

Public schools do not receive enough funds to cover all their needs. Although the state covers the teacher's payroll and some infrastructure, it does not provide for maintenance or renovation of the buildings or a great part of didactic material. To deal with those expenses, since 2002 individual schools have been able to apply for funds from a number of compensatory programs from the national state (successively named *Escuelas de Calidad*, *Escuela Segura*, *Escuelas de Tiempo Completo*, *Escuela Siempre Abierta*, *Escuela Digna*), or negotiate resources from local authorities. In addition, almost all public schools have an association of parents that charges voluntary membership fees and organizes regular events to raise funds for school-related expenses.

Upper secondary education institutions depend on either SEP, universities, or the National Institute of Fine Arts (INBAL). Most of the terminal, upper secondary education schools depend on SEP.

The majority of traditional universities (such as the National Autonomous University, UNAM, and the universities of each state capital) are funded by both the national and the states' governments, but they are autonomous in their administration and rule. The Instituto Politécnico Nacional (IPN), technological and polytechnic universities, as well as institutions focused on research and postgraduate studies,

such as the *Centro de Investigación y Estudios Avanzados* (CINVESTAV), also depend on SEP and have greater or lesser degrees of autonomy.

Both SEP and UNAM provide accreditation to a number of primary, secondary, and tertiary education institutes in the private sector, which guarantees that their curricula and infrastructure meet a set of standard regulations (The SEP accreditation mechanism is known as *Reconocimiento de Validez Oficial de Estudios* (RVOE).

Since the 1990s, a number of civil or autonomous organs have been established in order to assist the state education authorities in tasks of assessment and evaluation. The three main organs are described in what follows.

The civil association *Ceneval* is in charge of designing and implementing the standardized entry and completion exams of upper secondary education as well as of some tertiary education degrees, which serve both as diagnosis but also as a selection mechanism. It is also in charge of examining teachers' competences.

The *National Institute for the Evaluation of Education* (INEE) was from 2002 to 2019 the autonomous body in charge of assessing all parts of the education system, designing and implementing evaluation instruments to samples of schools over time (the EXCALE tests), and in dictating the guidelines for the evaluation of teachers. In 2019 it was replaced by a *Comisión Nacional para la Mejora Continua de la Educación*, with less autonomy and not oriented to a punitive evaluation of teachers (DOF 2019b).

The nongovernmental *Asociación Nacional de Universidades e Instituciones de Educación Superior* (ANUIES), which groups 197 public and private institutions from the entire country, is dedicated to assessing several aspects of the tertiary education sector and cooperates with SEP and the national government in matters of policy making.

2.3 Structure of the Educational System According to ISCED-Classification

2.3.1 Early Childhood Education Development (ISCED 01)

Early childhood education development – *educación inicial* – for children aged 42 days to 3 years, is granted free of charge to working mothers or – to a less extent – working fathers by different state bodies and jurisdictions (SEP, social service providers, municipal authorities) and some private enterprises. It is also offered privately, for a fee. The main state-funded early-childhood education centers are the following: Children Attention Centers (*Centros de Atención Infantil*, CAI) ran by SEP as a service to teachers and other SEP employees, *Estancias para el Bienestar y Desarrollo Infantil del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado* (ISSSTE), *Guarderías* del *Instituto Mexicano del Seguro*

Social (IMSS), *Estancias infantiles en los Centros Asistenciales de Desarrollo Infantil* (CADI), *Centros de Educación Inicial Indígena*, and *Centros de Asistencia Infantil Comunitaria* (CAIC) (UNICEF 2015). Large public universities, the army, and the navy have their own early-childhood education centers for their own employees. All these state-funded centers are supposed to work under the common guidelines of the program *Educación Inicial: Un Buen Comienzo* (2018), which conceives of babies and small children as subjects with rights of their own as well as competent learners and promotes their development in all cognitive, emotional, physical, and social aspects (DOF 2018). On the other hand, private early childhood education centers receive different names and only a handful of them are supervised by state authorities.

2.3.2 Basic Education: Preprimary (ISCED 02), Primary (ISCED 1), and Lower Secondary (ISCED 2)

Preprimary and primary school are provided in three modalities: general, indigenous (bilingual), and community (multigrade).

Preprimary education (*Educación preescolar*) comprises 3 years (children aged 3–6 years), all of them compulsory, and is provided also by the *Centros de Atención Infantil* (CAIs), *Preescolar General*, *Preescolar indígena*, *Preescolar Comunitario*, *Preescolar Particular*, *Preescolar Rural*.

Primary school comprises 6 years (all 6 years have been compulsory since 1934). Its curriculum and compulsory textbooks are common to the primary schools of the entire country, with the exception of the bilingual-intercultural primary schools. It covers 98.4% of the population aged 6 to 12 years (INEE 2019b).

Lower secondary school (compulsory since 1993) comprises 3 years for adolescents aged 12 to 15 years. There are five modalities of lower secondary education: general, technical, *telesecundaria*, community, and for workers. *Telesecundaria* (created 1968) is a modality whereby teaching is conducted by one teacher with the support of television broadcasts that cover different disciplines; it covers 20% of the secondary education demand. Technical secondary school attendance can lead to employment in the labor market.

Although there are special education schools in all cycles of basic level plus a cycle of vocational training in the *Centros de Atención Múltiple* (CAM), the General Law of Education promotes the inclusion of special needs children in general schools (SEP 2013).

2.3.3 Upper Secondary Education (ISCED 3)

ISCED 3 level has three options: (a) propaedeutic for higher education – *bachillerato general* or *escuela preparatoria* (ISCED 34); (b) bivalent, that is, it offers preparation for higher education as well as technical training – *bachillerato tecnológico* (ISCED 35); and (c) terminal – *educación profesional técnica* (ISCED 35) (Villa Lever 2010).

Upper secondary education may last 2 to 4 years. The third and last year of the general *bachillerato* allows students to specialize in one of five major areas: engineering, physics, and mathematics; medical, chemical, and biological sciences; economy and administrative sciences; social sciences and humanities; and music and fine arts. The *Centros de Educación Artística* (CEDART) are *bachilleratos generales* which place emphasis on the study of one of the fine arts. The largest terminal option of upper secondary education is the *Colegio Nacional de Educación Profesional Técnica* (CONALEP), which has over 300 campuses throughout the country, many of them in rural areas.

In several federal states, students are allocated to the different types of upper secondary institutions according to their test scores in the standardized entry exams designed by Ceneval: top-scoring students are sent to the general *bachilleratos*, average students to the bivalent options, and the lowest scoring students to the terminal institutions.

Students graduating from bivalent or terminal institutions may opt to go on to tertiary education (ISCED 5) as long as they pass the entry exams, yet this has proven very difficult and it rarely happens (Villa Lever 2010).

In Mexico, there is no postsecondary nontertiary education (ISCED 4): all postsecondary institutions, in theory, enable access to university education. In reality, the particular character of the different institutions favors or precludes access to tertiary education.

2.3.4 Tertiary Education (ISCED 5, 6, 7, 8)

Higher education in Mexico includes the levels of *Técnico Superior Universitario* (TSU) (ISCED 5), *Profesional Asociado* (PA) (ISCED 5), *Licenciatura* (ISCED 6), *Especialidad* (ISCED 7), *Maestría* (ISCED 7), and *Doctorado* (ISCED 8). The first of those degrees are shorter and oriented to the labor market. Many institutions offer those different degrees: 61 Technological Universities offer the degrees of TSU and *licenciatura*; 50 Polytechnic Universities offer degrees at the level of *licenciatura* and *especialidad*; traditional universities and 277 Technological Institutes offer *licenciatura*, *especialidad*, *maestría*, and *doctorado*; 12 Intercultural Universities offer the degrees of *Profesional Asociado*, *licenciatura*, *especialización*, *maestría*, and *doctorado* in areas related to the life of indigenous peoples and communities. Art degrees are obtained from traditional universities but also from the *Escuelas* ran by the National Institute of Fine Arts. Teacher training, as will be shown in the next section, is studied at the *licenciatura* level in the 408 normal schools (17 of them are normal rural schools) and on 80 campuses of the National Pedagogic University. Private higher education institutions are extremely heterogeneous and offer both short-term and long-term degrees, at all levels.

International Standard Classification of Education ISCED 2011 adapted for Mexico

Level		Age				Grade
ISCED 5–8	Tertiary education	25 +		Specialization, master and doctorate Postgraduate degrees		
		24				
		23				
		22		Normales Teacher training institutes	Bachelor degree University	5°
		21		Escuelas Normales		4°
		20	Técnico Superior Universitario			3°
		19				2°
		18				1°
ISCED 3	Upper secondary educated	17	Bachillerato	Profesional Técnico	[a]SNE Adult education	6°
		16				5°
		15				4°
ISCED 2	Lower secondary educated	14	Secondary			3°
		13				2°
		12				1°
ISCED 1	Primary education	11	Primary			6°
		10				5°
		9				4°
		8				3°
		7				2°
		6				1°
ISCED 0	Early-childhood education	5	Preschool		[b]SNE	3°
		4				2°
		3				1°
		2	Maternal			
		1				
		0				

[a]The theoretical age of entrance to these programs differs from those equivalent programs
[b]Special needs education
Compulsory education

2.4 Personnel Supply

By the end of 2019, there were 2,100,277 teachers in the education system, 77% in the public sector. Ca. 1,200,000 worked in basic education, 50.4% of them in primary school, 25.9% in lower secondary, and 23.7% in preschool education. 71% of all teachers in basic education are women (INEGI 2020).

Most teachers in basic education have graduated from a normal school or from the *Universidad Pedagógica Nacional*, where they can obtain a *licenciatura* (equivalent to BA) in one of the following modalities: preschool education, primary education,

secondary education, physical education, special education, preschool education in indigenous contexts, or primary education in indigenous contexts (SEP 2019). The majority of teachers in upper secondary and some in lower secondary education have a university degree in a specific discipline and some additional training in pedagogy. Normal rural schools, which have a key role in promoting social mobility as they are the sole option for tertiary education for the youth in many poor areas of the country (with a system of grants and boarding facilities), have been de-financed or closed down since the early twentieth century, but they still train almost 10% of the teacher population.

Teacher appointment procedures have varied widely over time as the Mexican education system expanded and then began to shrink because of demographic deceleration since the 1990s. It transited from the straight allocation of posts once teachers completed their degree (for most of the twentieth century), to the (irregular but tolerated) "sale" or "inheritance" of posts from retiring teachers to their chosen successors (in the early 2000s), to the selection via a general examination open to anyone regardless of background as long as she possessed a tertiary degree (in 2014–2018).

Since October 2019, the *Sistema para la Carrera de las Maestras y los Maestros* (2019) has regulated the mechanisms of entry and promotion of teachers in the basic and parts of the upper secondary public education system. According to its law and regulations, teacher positions must be advertised openly and appointment criteria comprise a variety of factors – adequate knowledge and skills for the particular context, previous training in pedagogical areas (not only graduates from Normal schools or the Pedagogical Universities can apply, but they are given preference), graduation report, other training courses, fluency in a foreign language, and digital skills, among others (DOF 2019a). Selection is carried out by commissions consisting of three parts: federal educational authorities, state educational authorities, and representatives from the National Teachers' Syndicate (SNTE).

In the period 2013–2018, regular exams were central to the permanence of teachers in their job. Whereas those exams were banished in 2019 and teacher evaluation has lost its punitive character, prevailing voluntary programs of salary compensation such as *carrera magisterial* (which began in the 1990s) grant economic incentives according to the results teachers get in such exams, as well as other indicators such as obtaining a postgraduate degree, academic publications, among others. *Carrera magisterial* is at present being integrated into a new *Programa de Promoción Horizontal por Niveles con Incentivos en Educación Básica.*

One particularity of the Mexican education system is the role of the powerful Teachers' Syndicate at the national level. Since 1993, all major educational reforms have been negotiated with the SNTE, as well as with the increasingly (re)active alternative teacher association *Coordinadora Nacional de Trabajadores de la Educación* (CNTE). During the twelve-year rule of the center-right party PAN (*Partido Acción Nacional*), 2000–2012, the strong alliance between the government and the SNTE (which even had its own political party) meant that the union was given vital functions within SEP, such as the subsecretariat of basic education with the power of redesigning the primary school curriculum and of writing the compulsory textbooks. Although its political power has decreased since 2012, the SNTE,

together with the CNTE, remains a powerful actor with which the center-left government of Andrés Manuel López Obrador (2018–2024) has to negotiate.

Appointment and evaluation procedures in higher education institutions are subject to rigorous mechanisms which are increasingly standardized. Appointment commissions are integrated by local professors who consider education, publishing, research, and teaching experience of the candidates, as well as their belonging to national and international networks. Full-time professors or researchers in public universities can join the *Programa para el Desarrollo Profesional Docente, para el Tipo Superior* (PRODEP) of the *Sistema Nacional de Investigadores* (SNI), programs that allow them to improve their research infrastructure, get funding for research projects, or receive a monthly (nontaxable, nonpensionable) income. However, around 60% of the personnel in charge of lecturing in public and private universities do not have full-time positions hence they cannot apply for those incentives (except for an honorary appointment in SNI). While they have helped to create a competitive and internationally connected body of researchers, programs of salary compensation have had a negative impact in terms of the ageing of academic staff and the insufficient availability of positions for younger scholars, given that a significant proportion of staff do not retire. Retirement is not compulsory and pensions, based on basic salaries, are very low.

3 Educational Trends and Highlighted Aspects

3.1 Inequality

Mexico is a highly unequal country, with a Gini index of 48.2, behind other countries in the continent such as Argentina or Venezuela (World Population Review 2020) and a very low intergenerational ascending social mobility: half of all the children born in the lowest income quintile of the population will remain in that quintile throughout their adult life (75% of them will stay in the two lowest quintiles), whereas only 2.1% of those born in that quintile will ascend to the highest quintile (compared to 7.5% in the USA and 13.5% in Canada) (COLMEX 2018).

Given that inequality of origin, the question arises as to the role education plays in favoring social mobility or in reproducing the social status. Recent studies suggest that for those levels where coverage is total or almost total, such as primary and lower secondary school, there is some "limited educational mobility" (Blanco 2017). That is, there is no direct correlation of socio-economic background and academic performance, and factors such as the educational capital – but not the cultural capital– and family expectations play a big role in pupils' achievement (Solís 2014).

However, socio-economic background does seem to play a decisive role in terms of access to tertiary education. Whereas tertiary education covers 39% of the population aged 18–25 years, about 65% and 45% of those who study in a higher education institute belong to the fifth and fourth highest income quintiles of the population, respectively, and only about 12% belong to the lowest income quintile (Solís 2015). Unequal access to tertiary education has to do not only with the fact that students from low-income families leave school earlier to join the labor force

(signified by the 14% dropout rate in upper secondary school), but with the fact that the offer of tertiary education is limited. Since the number of places available decreases in the transition from upper secondary to tertiary education, it is actually the students with the higher socio-economic backgrounds who occupy those spaces (Solís 2014). Because of the way new types and modalities of upper secondary institutions were created over time to include less-favored social sectors, this level segmented in schools of very different quality that leave students unequally prepared to continue to tertiary education. Although none of the secondary education options is terminal, only some of them favor their transition to tertiary education more than others. The way in which students are allocated in upper-secondary institutions, by means of standardized tests according to the results of which the students are placed in their school of choice, already produces inequality in the paths they will follow: students who get poorer results are sent to technical schools or to schools of poorer quality whereby their chances to go to tertiary education are decreased (Solís 2014). The quality of upper secondary schools varies throughout regions, being generally worse in rural and indigenous communities.

Since 1997, the central government has run programs of cash transfers to families in poverty, conditioned to having their children in school (*Progresa*, *Oportunidades*, *Bienestar para las familias*). Such programs have increased over the years and at present there is a wide range of scholarships for students also in upper secondary education (*Becas Benito Juárez*), tertiary education (*Jóvenes Escribiendo el Futuro*) provided they are enrolled in the public education system (Gobierno de México 2020). In 2018, there were about 7.5 million of those scholarships (SEP 2018a). The incidence of these scholarships in preventing drop-out rates has been positively evaluated in the past. Whereas this type of cash transfer tends to have a clientelist purpose, aimed at gaining sympathy and votes for the political party that grants it, since 2020 those scholarships – alongside other cash-transfer programs – are a constitutional provision (Article 4), which makes them a social right.

3.2 ICT and Digitalization

Since the 1990s, the Mexican government has strived to provide public schools with infrastructure for information and communication technologies, often via programs designed under a public and private partnership scheme. Programs such as *Red escolar* (1998–2004), *Enciclomedia* (2004–2011), *Habilidades Digitales para Todos* (2009–2012), *Mi Compu.MX* (2013–2014), *Programa Piloto de Inclusión Digital* (2013–2015), *Programa @prende.mx* (2014–2016), and *Programa @prende 2.0* (2016–2017), among others, have provided schools with computers and Internet connection, and students with laptops or tablets for personal use.

National and international assessment of those programs has centered on the distribution of equipment and the number of hours it is used in schools, as well as on the incidence the programs have on the performance of students in standardized tests. In this respect, it is evident that those programs have failed to include the majority of the Mexican school population. In the school year 2017–2018, 46.5% of all public primary schools and 74.7% of all public lower secondary schools had at

least one computer for educational purposes. However, only 41% of schools had the ideal ratio of 8 students (or less) per computer and only in half of those cases were the computers connected to the Internet (INEE 2019b). Access to ICT varied widely according to types of schools: only 31.9% of indigenous schools and 1.7% of community primary schools had at least one computer (IBIDEM).

ICT in schools does not automatically translate into better learning. As an OECD comparative study has shown, at least by 2015 no correlation could be detected between expanded use of ICT and better PISA results in mathematics in several countries (OECD 2015). However, the lack of ICT access at home does lead to serious learning inequalities among social groups, as the 2020 Covid-19 pandemic evidenced. In 2019, only 44.3% of all households had at least one computer at home and only 56.4% had access to Internet (INEGI 2020), largely due to the high cost of Internet in comparison to most OECD countries, with significant variations between lower and upper social groups. This led to the exclusion of large numbers of students from schooling when the entire education system was closed in March 2020 (and at least until September 2020). Whereas SEP rapidly put in place a program of unified TV broadcasts for preschool, primary, and secondary education, some schools – public and private – developed regular online classes or chat groups with students and parents, but only those with Internet access at home could join.

Since their introduction, the different teaching models promoted by ICT programs in Mexico have ranged from the display of interactive materials on a screen located at the center of the classroom, exercises that students can solve by themselves using their tablets, and models that promote the self-management of learning as well as collaborative work via distant interaction. However, qualitative research suggests that while ICT have changed several teaching practices, they have not (yet) generally transformed the ways in which students relate with knowledge and its production. Whereas teachers in the basic education system acknowledge the importance of promoting research, problem solving, reflection, and analysis of contents and concepts among their students, they also acknowledge that their teaching practices consist mainly of transmitting information, giving their students assignments and evaluating them. Complex assignments that incorporate interactive environments or the use of different digital tools for searching and analyzing data are still uncommon (Kalman 2016).

3.3 STEM Subjects

Professions related to science, technology, engineering, or mathematics (STEM) are considered essential for a country to survive in the so-called fourth industrial revolution and to deal with the UN 2030 sustainable development goals. In Mexico, school performance in those subjects is low for international standards and only 25% of the student population choose a university degree in STEM-related subjects. This has raised alarm in recent years.

In PISA 2018, Mexican young students had an average performance of 409 points in mathematics and 429 points in sciences, compared to the OECD average of 489 in

both. Less than 1% of Mexican students ranked excellent (PISA-levels 5 and 6) in mathematics and natural sciences competences contrasting the 8% average for OECD countries (and the 44% of China and 37% of Singapore). Boys were 12 and 9 points above girls in mathematics and natural sciences, respectively (compared to the OECD average of 5 points boys over girls in mathematics and 2 points girls over boys in natural sciences). Students from higher socio-economic status had a 12% better performance in science and mathematics than students from lower status (OECD 2019a).

The reasons for the meager performance of Mexicans in STEM-related subjects are located at the basic education level. Poor curriculum planning, inadequate textbooks, memoristic forms of teaching that discourage experimental exercises (lower secondary school laboratories have been gradually dismantled and/or replaced by "virtual" labs), insufficient teacher training, and an idea of science ingrained in our culture as something unreachable (science is for people with special skills), immutable (science reveals absolute truths), and negative (science is potentially destructive) have been named among the factors involved (INEE 2012).

Only 38% of those who study a STEM degree are women. Research suggests that girls lose interest in science subjects during the last years of primary and the first years of secondary education. Family, community and institutional culture, as well as gender biased teacher encouragement are considered contributing factors (INEE 2019a). Moreover, although the labor market favors STEM-related degrees (salaries in engineering are 32% higher than in the education area, and a degree in physics or mathematics means 19% more payment than the general average salary), women tend to occupy jobs that are less technical and less managerial, which results in a gender-related income gap (CEE 2019).

Although SEP promotes constant curriculum and textbook reforms in all subjects, in the past five years an increasing number of initiatives of promotion of STEM competences come from the private sector. The civil association *Movimiento STEAM* (created 2017) brings together different stakeholders such as private enterprises, government agencies, academics, NGOs, teachers, and parents (Movimiento STEAM n.d.). *Movimiento STEAM* works in close relation with the *Alianza para la Promoción de STEM*, an initiative of several chambers of enterprise in Mexico, the USA, and Canada. These initiatives promote the renewal of learning environments to encourage critical thinking, creativity, problem solving, data and digital literacies, and collaborative work, with the use of methodologies such as challenge-oriented and project-based learning.

Within that framework, a number of specific programs have been launched to bridge the STEM gender gap (INEE 2019a) mentoring programs (such as *Mujeres en STEM: Futuras líderes*) (López 2018), workshops, campaigns addressed to parents to create an environment that promotes interest in science and technology without gender stereotypes, and programs for girls ran by SEP, such as *Niñas STEM pueden* (SEP 2018b).

4 Conclusions

Since its reorganization and institutional consolidation in the 1920s, the Mexican education system has demonstrated an effort to expand coverage in order to include an always increasing population. Throughout that expansion, its policies have strived to fight deep social inequalities in the access to good quality education. The centralization of the education system, the development of a unified curriculum, and the distribution of common textbooks for all primary school students should be understood not merely as the pretension of a democratically deficient state to impose a common view of the nation, but rather as part of a century-long process intending to fight deep social stratification that cuts through the Mexican society. A unified curriculum and common textbooks have served to guarantee that all children, regardless of social class, have access to some form of school material and to a minimum set of contents, as well as to provide basic orientation for teachers. Since the 1990s, direct government cash transfers for parents with school-aged children and scholarships to a large number of students in state-funded tertiary education have constituted a social compensation mechanism intending to guarantee the right to education for all.

The Mexican education system has diversified to develop specific modalities of education for rural, indigenous, and urban working-class groups of the population. Indigenous and community schools, *tele-secundaria*, and technological secondary education are some such examples. However, whereas these modalities have extended coverage of primary and secondary school and have helped transform the Mexican society, at present those studies do not necessarily lead individuals to a better social status, the current low rate of intergenerational social mobility suggests.

The ways in which the Mexican education system has grown and expanded have produced differences that have been dealt with by new regulatory mechanisms, such as standard assessments for schools, standardized conclusion or entry exams to upper secondary education, and continuous evaluation of teachers. These mechanisms have, in turn, led to further inequalities. For example, standardized upper-secondary entry exams have served to reinforce existing social inequalities by preventing less favored sectors from accessing the schools that would, in turn, lead them to tertiary education. Studies suggest that this situation may change when the tertiary education offer grows to meet the increasing demand. Moreover, standard examinations in primary and secondary schools have been used for the evaluation of teachers and the creation of rankings, which has had a negative impact for teachers working in contexts of extended poverty. Competition-based programs for the improvement of school infrastructure or for salary compensations for teachers and academics have created significant inequalities between beneficiaries and others who are left out, and have contributed to keeping resources low for schools and basic salaries.

In terms of gender, the education system has been successful in recruiting an equal number of boys and girls at all levels, girls outnumbering boys in upper secondary and tertiary education. However, the low number of girls in STEM

degrees and the delay in women's transition to the labor market are evident signs of gender inequality related to educational as well as to cultural and social factors.

At present, the main challenge to the Mexican education system is the unequal access to ICT which has become vital to continue school from home during the extended Covid-19 crisis. In spite of the schooling strategy via TV broadcasts, studies indicate that those students who manage to have contact with their teachers and peers via online lectures or regular interaction via chatrooms or e-mail are at considerable advantage compared who those who do not have such links. The responsibility for education has been largely transferred from the school to the family; hence, learning becomes contingent to the resources, time, and educational capital of the individuals which, as mentioned throughout this essay, is stratified along rural/urban, private/public, and economic lines. In a deeply unequal society, the homogenizing character of the school space is lost as long as schools remained closed.

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