Chapter 3. The structure and governance of higher education in Mexico

This chapter contextualises Mexican higher education within the country's broader education system and provides an overview of the structure of higher education, a profile of higher education students, the pathways and processes to enter higher education, and the investment made by governments in higher education. This chapter also explores how the Mexican government and its subordinate agencies use regulation, funding, information and organisation within the higher education system. The chapter concludes with a discussion of the implications that the structure and governance of education have for labour market relevance.

Structure of the higher education system

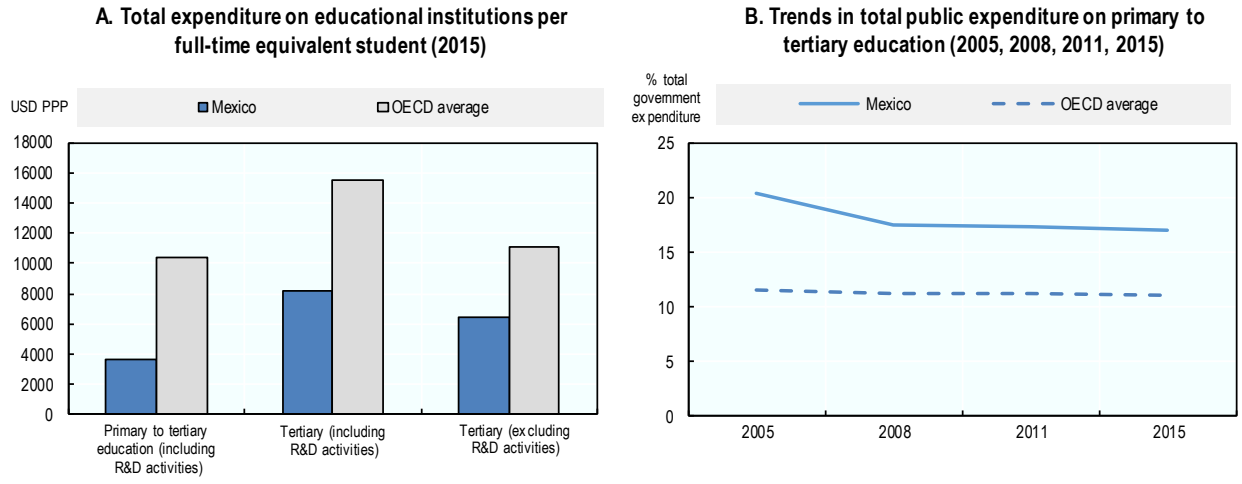
Overview of the education system

The Mexican education system, from primary education to higher education, has grown exponentially since 1950, from 1 to 37 million students. Mexico spends 5.3% of gross domestic product (GDP) on education institutions, slightly above the average expenditure of 5.2% across all OECD countries (OECD, 2018[1]). Expenditure on education institutions has increased from 5.0% in 2005; the proportion of funding from the private non-educational sector has remained stable at around 1.0% (OECD, 2018[1]).

The Mexican government prioritises education, which represents 17% of public expenditure, six percentage points above the OECD average (11%) (OECD, 2018[1]). However, due to a large increase in the student population, in 2015 the annual expenditure per student was the lowest among OECD countries, and 2.9 times lower than the OECD average (USD 3 611 vs. USD 10 520). More funding is allocated to primary and secondary education, which receive three-quarters of the budget (OECD average 72%), and 80% of education funding is public (OECD average 84%) (OECD, 2018[1]).

The Mexican education system includes: early childhood education (0-2 year-olds); pre-primary education (International Standard Classification of Education, or ISCED 0, 3-5 year-olds), which is the first level of compulsory education; primary education (ISCED 1, 6-11 year-olds); lower secondary education (ISCED 2, 12-14 year-olds); and upper secondary education (ISCED 3, 15-17 year-olds). Education is compulsory from pre-primary to upper secondary level. Primary and lower secondary education levels have almost universal enrolment, but the enrolment rate in upper secondary drops to around 57%, the lowest among OECD countries (OECD, 2018[1]).

Figure 3.1. Public expenditure on education, Mexico and OECD average



Source: OECD (2017), Education at a Glance 2017, OECD Publishing, Paris.

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Primary education is offered in three strands: general, indigenous and community courses; lower secondary education is also provided in the form of general, distance, technical, community courses and job training. Students in upper secondary education can

choose from general, combined and vocational strands. In 2016-17, enrolment rates for these strands were 62.4%, 36.3% and 1.3% respectively (SEP, 2017[2]).

Despite compulsory education from ISCED 1 to ISCED 3, only the general and combined strands of upper secondary education allow access to higher education (ISCED 5-8). Graduates from vocational upper secondary education cannot enter higher education. However, the Mexican higher education system does not offer post-secondary non-tertiary education programmes (ISCED 4), which leaves these students with no avenue for post-secondary education.

Graduates from the general and combined strands of upper secondary education can enter either a two-year post-secondary vocational programme at ISCED 5 level (*técnico superior universitario* or *profesional asociado*) or a four- or five-year bachelor's programme at ISCED 6 level (*licenciatura*). The bachelor's degree gives access to ISCED 7 level programmes, either a one-year specialisation (*especialización*) or a two-year master's programme (*maestría*). Completing the latter allows graduates to pursue further academic studies at the ISCED 8 doctoral level (*doctorado*) (and Table 3.1).

Table 3.1. Education system in Mexico: Key figures, 2016-2017

Level	Teachers	Schools	Enrolment	Enrolment by gender		Enrolment by school		Enrolment by type of education		
			Total	Women	Men	Public	Private	General	Indigenous	Community courses
Pre-school	234 635	88 939	4 931 986	49.6%	50.4%	85.7%	14.3%	88.1%	8.6%	3.3%
Primary	573 284	97 553	14 137 862	49.1%	50.9%	90.7%	9.3%	93.5%	5.7%	0.8%
								General	Distance	Technical
Secondary	409 272	39 265	6 710 845	49.4%	50.6%	91.2%	8.8%	50.4%	21.4%	27.1%
								General	Combined	Vocational
Upper secondary	417 745	20 718	5 128 518	50.4%	49.6%	81.2%	18.8%	62.4%	36.3%	1.3%
	Academic staff	Campuses						ISCED 5	ISCED 6	ISCED 7-8
Higher education	388 310	5 311	4 430 248	49.5%	50.5%	66.4%	33.6%	4.6%	88.9%	6.5%

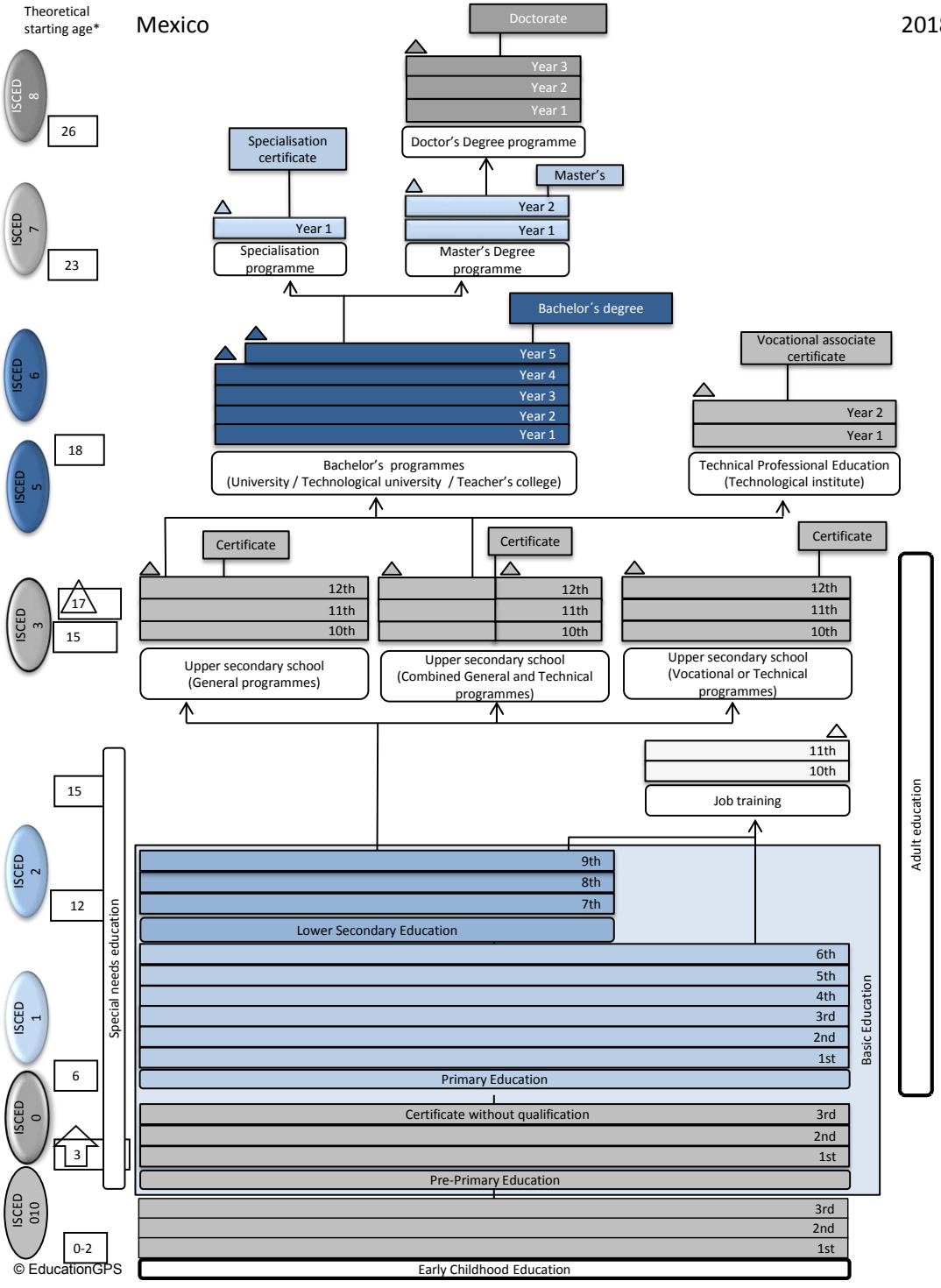
Source: (SEP, 2017[2]).

StatLink http://dx.doi.org/10.1787/888933880489

The Mexican higher education system is complex and heterogeneous. It is comprised of 13 subsystems, which vary by government dependence and accountability, source of funding, size, enrolment, specialisation in fields of study and levels of programmes (Table 3.2), as well as location and mission focus.

In 2016-17, 3 762 higher education institutions offered 37 953 programmes across more than 5 000 campuses with close to 390 000 academic staff (SEP, 2017[2]). These figures do not include programmes offered by private higher education institutions not licensed by the government. Therefore, the total number of programmes on offer in Mexico is higher but unknown.

Figure 3.2. Education System in Mexico



Source: (OECD, 2018[3]). Structure of the higher education system

Government dependence

All but two of the subsystems consist of public higher education institutions, with varying degrees of government dependence. The remaining two subsystems are private and completely independent from the government.

The primary distinction between institutions in the public subsystems is their level of autonomy. While federal and state universities depend on the government for public funding, they have the autonomy to make most of their decisions. The remaining seven subsystems are comprised of institutions that act as decentralised government agencies under the direct control of the Secretariat of Public Education (*Secretaria de Educación Pública,* SEP). The federal government has representation in the board of directors, sets the regulatory framework that guides these institutions and can decide some aspects of their operation, such as the programmes offered and the curriculum. A series of units and agencies within SEP co-ordinate these higher education subsystems:

- The General Co-ordination of Technological and Polytechnic Universities (*Coordinación General de Universidades Tecnológica y Politécnicas,* CGUTyP) co-ordinates polytechnic and technological universities.
- The National Technological Institute of Mexico (*Tecnológico Nacional de México,* TecNM) co-ordinates centralised and decentralised institutes of technology.
- The General Directorate of Higher Education for Education Professionals (*Dirección General de Educación Superior para Profesionales de la Educación,* DGESPE) co-ordinates public teacher education colleges.
- The General Directorate of University Higher Education (*Dirección General de Educación Superior Universitaria,* DGESU) co-ordinates state public universities.
- The General Co-ordination of Intercultural and Bilingual Education (*Coordinación General de Educación Intercultural y Bilingüe,* CGEIB) co-ordinates intercultural universities.

An additional three higher education institutions are also decentralised agencies of SEP, but operate outside the subsystems:

- The National Pedagogical University (*Universidad Pedagógica Nacional,* UPN)
- The National Polytechnic Institute (*Instituto Politécnico Nacional,* IPN)
- The Open and Distance Learning University of Mexico (*Universidad Abierta y a Distancia,* UnADM).

These are large institutions, and UPN and IPN have multiple campuses across Mexico.

The public research centre subsystem consists of 37 centres that also offer higher education. The National Council for Science and Technology *(Consejo Nacional de Ciencia y Tecnología,* CONACyT*),* which reports directly to the President of Mexico, manages 28 centres. The remaining centres are managed by IPN, the National University of Mexico (*Universidad Nacional Autónoma de México,* UNAM) and some state governments.

The "other public higher education institutions" subsystem consists of a range of institutions that cannot be classified elsewhere. It includes some direct provision institutions and institutes managed by other secretariats and government agencies, such as the secretariats of justice, energy, agriculture, defence or health.

Source of public funding

The 11 public subsystems all receive public funding at varying levels. The federal public universities, federal institutes of technology, public teacher education colleges and public research centres receive all of their public funding from the federal government. The other seven public subsystems receive funding from both the federal and state governments in different proportions. Higher education institutions in all subsystems can generate additional revenue from households or other private sources (e.g. industry, social partners).

Size and enrolment

The higher education system in Mexico has grown rapidly in recent decades. In 1970-1971, there were around 270 000 students enrolled in 385 campuses across Mexico. By 2016-2017, this had grown to approximately 4.4 million students, of which 3.8 million were studying in face-to-face programmes and 0.6 million in distance or online programmes (SEP, 2017[2]).

One-third of students (33.2%) are enrolled in private universities, the largest subsystem. The majority (72%) of higher education institutions are private, and this number has dramatically increased from less than 33% in 2004. Despite the increase in the number of institutions, private universities are now smaller, meaning that overall they enrol around 10% less students than in 2004.

Public state universities and public federal universities are the second and third largest subsystems and enrol 26% and 13.2% of students respectively. These two subsystems are comprised of 48 of the oldest and largest universities.

Some of the smaller direct provision subsystems, such as technological universities, decentralised institutes of technology and intercultural universities, have been growing around 13% annually since 2000. In 2002, the most recent subsystem, polytechnic universities, was established. Since then, the subsystem has grown 42.5% annually, however, the 61 institutions currently only enrol 2.1% of students.

Level of programmes provided

Higher education institutions in Mexico deliver programmes from ISCED 5 (short-cycle tertiary education) to ISCED 8 (doctorate programmes) (Table 3.2). Some subsystems commence their programme offers at bachelor's level (ISCED 6), and technological universities are not able to offer programmes at the doctoral level (ISCED 8).

However, subsystems tend to focus on different levels of programme. In technological universities, for example, over 90% of students at are enrolled in short-cycle tertiary education programmes, but few institutions outside this subsystem offer these programmes. Public research centres specialise in postgraduate programmes, with half of their student population enrolled in master's programmes and more than 35% in doctoral programmes. (Table 3.2).

Field of study specialisation

While some subsystems offer programmes in a large range of fields of study, others deliver programmes in a limited range of fields of study, or even just one specific field. Public federal and state universities are the most comprehensive subsystems and offer a wider range of programmes in all fields of study.

Institutes of technology, technological and polytechnic universities deliver predominantly technological (ISCED 6) and technical (ISCED 5) programmes, although they are currently expanding to offer business programmes. Intercultural universities offer particular fields relevant to regional development. Other subsystems specialise in one field of study, such as teacher education colleges (i.e. *Normales* and *Centros de Actualización del Magisterio*).

Functions

Subsystems focus to a different extent on one or more of the three key functions of higher education: education, research and engagement with the wider world. While private higher education institutions are more likely to focus solely on education, all public higher education subsystems fulfil the three functions to some extent. Some public subsystems, such as state public universities with solidarity support, have a greater focus on education. Others, such as public federal universities and research centres, are more research focused.

Some types of higher education institution have a special focus on engagement activities at the regional level, either with the community (intercultural universities) or with social partners (institutes of technology, technological universities and polytechnic universities). This engagement can take place in education-related activities, such as curriculum co-design and co-delivery with social partners, or research activities, such as collaboration in research and development (R&D) or technology transfer.

Orientation

While there are major differences between the types of institutions, they are predominantly professionally oriented, and the vast majority of students are enrolled in bachelor programmes designed to prepare them for the labour market. However, other than the technological subsystems, Mexican higher education institutions do not generally have strong links to the labour market.

SEP established technological universities and polytechnic universities in 1991 and 2001 respectively to better adapt higher education programmes to meet the demands of the labour market. Most institutions within these subsystems were established in small municipalities in order to provide regional industries with highly qualified graduates.

Intercultural universities are established in remote areas that had little to no previous higher education provision. These universities are generally located in states with a large Indigenous population, i.e. Chiapas, Guerrero, Michoacán, Hidalgo, Quintana Roo, San Luis Potosí, and Tabasco. Although they are open to all students, intercultural universities focus on regional development and the particular needs of Indigenous populations.

Public federal and state universities, and the most prestigious private universities located in large metropolitan areas, have a more internationally oriented curriculum and provide more opportunities for staff and student mobility (see Chapter 5) than the institutes of technology, technological or polytechnic universities, which are aimed at addressing national and state labour market needs.

Table 3.2. Main characteristics of the Mexican higher education system by subsystem

					Enrolment					Institutions		Campuses		Programmes	
Higher education subsystem	Type of institution	ISCED level	Field of study	Source of public funding	Number of students	% total	Under-graduate	Post-graduate	Annual growth[1]	Total	% total	Total	% total	Total	% total
State public universities	Public	5 to 8	Comprehensive	Federal (SEP-DGESU) and state (different proportions)	1 152 317	26.0%	95.3%	4.7%	3.4%	34	0.9%	929	15.2%	5 480	14.4%
Federal public universities	Public	5 to 8	Comprehensive	Federal (SHCP)	584 692	13.2%	91.4%	8.6%	3.9%	9	2.5%	229	3.7%	1 491	3.9%
Federal institutes of technology	Public (direct provision)	5 to 8	Technological fields	Federal (SEP-Tecnológico Nacional de México)	340 800	7.7%	98.8%	1.2%	3.1%	128	3.4%	135	2.2%	1 658	4.4%
Decentralised institutes of technology	Public (direct provision)	5 to 8	Technological fields	Federal and state (50% each)	241 035	5.4%	99.6%	0.4%	12.5%	134	3.6%	141	2.3%	1 263	3.3%
Technological universities	Public (direct provision)	5 to 7	Technical fields	Federal and state (50%)	241 688	5.5%	100.0%	0.0%	12.6%	113	3.0%	131	2.1%	1 685	4.4%
Polytechnic universities	Public (direct provision)	6 to 8	Technical fields	Federal and state (50% each)	92 785	2.1%	98.8%	1.2%	42.5%	61	1.6%	61	1.0%	378	1.0%
Teacher education colleges (public)	Public (direct provision)	5 to 8	Education	Federal (SEP-DGESPE)	83 573	1.9%	96.3%	3.7%	-2.5%	276	7.3%	306	5.0%	864	2.3%
State public universities with solidarity support	Public (direct provision)	6 to 8	Fields relevant to region	Federal and state (different proportions)	68 089	1.5%	98.2%	1.8%	8.3%	22	0.6%	100	1.6%	514	1.4%
Intercultural universities	Public (direct provision)	5 to 8	Fields relevant to region	Federal and state (50% each)	14 784	0.3%	99.5%	0.5%	14%	11	0.3%	31	0.5%	129	0.3%
Public research centres	Public (direct provision)	6 to 8	One specific field of study	Federal (SEP and CONACyT)	6 996	0.2%	2.2%	97.8%	4%	37	1.0%	65	1.1%	217	0.6%
Other public higher education institutions	Public and some direct provision	5 to 8	Varied	Federal and state	116 813	2.6%	85.3%	14.7%	2.3%	160	4.3%	305	5.0%	1 325	3.5%
Private universities	Private	5 to 8	Varied	None	1 472 197	33.2%	86.8%	13.2%	4.5%	2,517	66.9%	3,496	57.0%	22 537	59.4%
Teacher education colleges (private)	Private	6 to 8	Education	None	14 479	0.3%	95.1%	4.9%	-	176	4.7%	200	3.3%	412	1.1%

Note[1] Average annual growth since 2000 (2001 for intercultural universities and 2002 for polytechnic universities).
Source: OECD compilation based on Education system of the United States of Mexico. Key Figures 2016-2017 (SEP, 2017[2]).
StatLink http://dx.doi.org/10.1787/888933880527

Location

Higher education in Mexico has been decentralised in two ways: from Mexico City to other states and from large metropolitan areas to smaller municipalities. In the 1950s, almost 70% of students were enrolled in Mexico City; this share fell to 18% in 2017 (SEP, 2017[2]), with students more evenly distributed among the 32 states.

At the same time, a greater recognition of the importance of higher education for regional development has led federal and state governments to establish a number of higher education institutions in smaller municipalities. Despite this development in smaller municipalities since the 1990s, 79% of Mexican higher education students are presently enrolled in institutions located in metropolitan areas.

Between 2000 and 2015, the higher education attainment rate of the labour force increased across all states on average by 49% (OECD, 2017[4]). The three states in which the higher education attainment rate almost doubled during this period are Oaxaca (from 9% to 17.1%), Hidalgo (from 10.1% to 19.5%) and Yucatan (from 11.8% to 23%).

Autonomy and accountability of higher education institutions

The higher education institutions in public subsystems have varying degrees of autonomy and different accountability requirements. Private higher education institutions are entirely independent and managed by private boards.

Autonomous higher education institutions

The Constitution of Mexico guarantees full autonomy to all public federal and all but one state university (Article 3, section VII). These institutions are created and governed by their individual acts (issued by the federal legislative branch for federal public universities and by the state congresses for state public universities). The Mexican Constitution recognises their freedom to govern themselves, recruit staff (including the rector), promote academic staff, establish admission processes for students, develop and deliver academic programmes, and manage their assets. They use a collegial model of institutional governance with several management boards (Box 3.1).

The government does not directly intervene in autonomous universities, but it uses various policy levers to promote the alignment of institutional policy with national development priorities (see Chapter 6). For example, autonomous public universities must meet certain requirements for transparency and accountability, as outlined in the Transparency and Public Governmental Information Access Act (*Ley de Transparencia y Acceso a la Información Pública Gubernamental*) of 2002. These require autonomous universities to collect and provide certain information to the federal and state governments on an annual basis. This information is made publicly available (Articles 70 and 75) and includes information about study programmes, administrative procedures, scholarships, vacancies, academic staff salaries and assessment results. The provision of this information is a pre-requisite for targeted funding from the federal government.

Other subsystems, such as state public universities with solidarity support, intercultural universities and some public research centres, have partial autonomy. They can freely make some decisions, but need government approval for others. The level of autonomy and the areas in which autonomy applies are different for each subsystem.

Box 3.1. Management boards within autonomous universities

Mexican autonomous universities have three boards with different members and functions.

The **university board** (*consejo universitario*) consists of directors of schools and representatives of academic staff and students; the rector heads the board and the university's secretary general is usually the board's secretary. Responsibilities include: setting institutional regulations and policies; approving the institution's development plan, programmes and curricula, annual expenditure and revenue budgets; creating new academic units, areas or departments; and reading and approving the rector's annual report. While the board of certain institutions is empowered to designate the rector after a consultation with the institution's community, in others, the university board is empowered to appoint members of the governing board.

The **governing board** (*junta de gobierno*) consists of nine or more internal and external members with the power to appoint and remove the rector (and, if applicable, other university officials), review the rector's work programme and annual report, and issue recommendations for the adequate performance of the institution. In some institutions, it is a tool to solve discrepancies between the rector and the university board or other collegiate entity.

The **patronage board** (*patronato*) is made up of six or more internal and external members empowered to manage the institution's heritage, raise additional funding and, at times, establish tuition fees.

The internal members that constitute these boards are representatives of academic staff, students, administration and management. The external members are representatives of the community and social partners.

Higher education institutions as government agencies

The federal government and all state governments have also established higher education institutions that operate as government agencies and have limited autonomy. These "direct provision" institutions are predominantly public teacher education colleges and Normal schools, institutes of technology, technological and polytechnic universities and research centres. Most have been established for regional development purposes and are meant to either improve access for a specific population group or in a particular geographic area, or deliver programmes that meet labour market demands.

Institutions within these subsystems are regulated by a guiding framework set by the government, although their management boards can decide some aspects such as appointments, promotions and academic tenure (Box 3.2). Their curriculum is designed and approved by federal or state authorities, but representatives from the regional and local industry and the community are often involved and have a say in curricula design.

Box 3.2. Governance in direct provision higher education institutions

The decentralised institutes of technology, technological universities, polytechnic universities and intercultural universities are direct provision institutions, which operate as government agencies. They are managed by a board of directors, which includes federal and state government representatives. The boards also have representatives of the business community and broader stakeholders from the region and municipality.

The boards establish internal institutional regulations and policies and approve, among others: an institutional development plan, programmes and curricula, the annual revenue and expenditure budget, the annual rector's report, and the organisational structure of the institution. Some of the boards for state-based institutions are also able to propose candidates for the rector's position to the state governor, who makes the final decision.

SEP appoints the directors of the federal institutes of technology (who enjoy broad managerial freedom) and the state institutes of technology (in collaboration with the state governments and social partners, represented in the boards of directors).

In some institutions, consultation boards complement the governing structure.

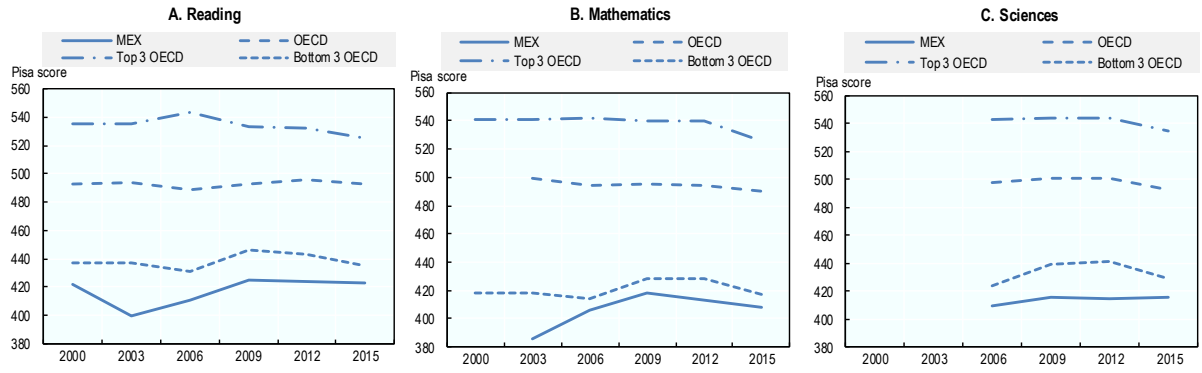
Access to the higher education system

Upper secondary education

The skills levels of secondary school graduates entering higher education are generally low and represent a concern for higher education institutions. Mexican secondary education students score at the bottom of OECD countries participating in the Programme for International Student Assessment (PISA) tests of numeracy, literacy, and science (Figure 3.3), and results have improved only marginally since 2000. Less than 1% of Mexican 15-year-olds are top performers in mathematics or science, compared to 13% of students across OECD countries. Over half (56.6%) of Mexican students do not achieve the baseline level 2 of proficiency in the numeracy exam (22.9% OECD average), which is the level assumed to be necessary to fully function in modern economies (OECD, 2015[5]). Mexican students also have the second lowest performance in collaborative problem solving (OECD, 2017[6]).

Results of final year upper secondary education students tested for language and mathematics skills in the National Plan for the Evaluation of Learning (*Plan Nacional para la Evaluación de los Aprendizajes*, PLANEA) test administered by the National Institute for the Evaluation of Education (INEE) also show poor skills levels. The most recent PRONAE test in 2017 shows that one-third of students do not have basic language and communication skills, and two-thirds do not have basic mathematics skills. Only 9% and 3% of students performed at the highest level in the language and mathematics tests respectively (INEE, 2017[7]).

Figure 3.3. Proficiency among 15-year-old students in reading, mathematics and sciences, 2000, 2003, 2006, 2009, 2012 and 2015



Source: OECD (2000-2015) Programme for International Student Assessment (PISA) (OECD, 2015[5]).

StatLink http://dx.doi.org/10.1787/888933880546

Consistent with other countries participating in PISA, socio-economic background and gender are determining factors in performance at school in Mexico. While girls generally show better results in reading, collaborative problem solving and language, boys tend to outperform girls in mathematics and science. In Mexico, high performing students are more likely to come from an economically advantaged background with highly educated parents and have attended autonomous public upper secondary education schools. Geographic area can also be an indicator of performance; for example, only 18% of students in Mexico City scored at the lowest level in the 2017 PRONAE language test, compared to two-thirds of students in the Chiapas (See Annex 3.A for a summary of Mexican students' results in key evaluation tests).

Despite the fact that upper secondary education has been compulsory since 2013, Mexico has the highest share of non-completion rates in upper secondary education across the OECD. In 2016, only 59% of 15-19 year-olds were enrolled in education (85% OECD average), which is significantly lower than in other Latin American countries, such as Argentina (76%) and Chile (76%) (OECD, 2018[1]).

Students who drop out of upper secondary education are more likely to come from urban areas and have a low socio-economic background. Students from rural areas are more likely to complete upper secondary education (56.7% of boys and 60.4% of girls). Additionally, 80% of upper secondary education graduates come from an advantaged background (i.e. those in the wealthiest quintile), compared to only 18% of graduates from the poorest quintile (ECLAC, 2017[8]).

Admission and transition within the higher education system

Higher education entry

The enrolment in upper secondary education in Mexico is around 57%, and almost three in four (74%) students who graduate from upper secondary education enter higher education *(tasa de absorción)*. Education mobility among young adults in Mexico has remain almost constant over recent decades. Again, socio-economic status in Mexico is a determining factor, with only 15.3% of the poorest quintile, compared to 55.8% of the

richest, participating in higher education in Mexico. This is lower than Latin American countries such as Chile, Argentina, Peru, Bolivia and Venezuela. Location is another important factor, and Mexican higher education enrols below half of the students for rural than from urban areas (CEDLAS and World Bank, 2017[9]).

As noted above, only graduates from the general and combined strands in upper secondary education are eligible to enter higher education. Students who have completed a general programme are more likely to enter higher education than those from a combined programme; students from large state-based public schools or private schools are also more likely to enter higher education. Public schools in cities tend to deliver general and combined programmes, while those in small towns deliver predominantly combined and vocational programmes. Most private upper secondary schools are based in cities and deliver general programmes to students from a higher socio-economic background (Barragan-Torres, 2017[10]).

Several higher education institutions have formal agreements with upper secondary schools, and some have their own upper secondary schools in order to prepare prospective students. Graduates from these programmes are almost automatically accepted onto bachelor's programmes in their respective higher education institutions (*pase automático*). This practice has been criticised as favouring students from more advantaged backgrounds and hindering equitable access. This practice also applies to graduates from bachelor's programmes who apply to a postgraduate programme in the same institution. The automatic enrolment pass was declared unconstitutional by the Supreme Court of Justice in 2006, but is still practised.

The federal and state governments have established new institutions in remote and scarcely populated regions with disadvantaged populations in an attempt to improve access to higher education for youth in these areas. The intercultural universities support equitable access to higher education by selecting students based on Indigenous, language and gender representation.

In addition, some higher education institutions have recently increased the delivery of online and distance education programmes to widen access to new types of students. In 2017, over 25% of students in private universities and 9% of students in public universities were enrolled in online or distance programmes. These programmes are more common at the postgraduate level. This trend has also been supported by federal government initiatives, such as the creation of the Open and Distance Learning University (UnADM) in 2012.

Tuition fees in some Mexican higher education institutions can be high, which can deter disadvantaged students who wish to access higher education. Tuition fees are set by higher education institutions and vary widely across the system. An undergraduate four or five-year programme can cost from MXN 125 000 to 930 000 (Mexican peso) (USD 6 700 to 50 000) in a private university, and around MXN 30 000 (USD 1 650) in a public higher education institution (IMCO, 2016[11]). The fees are the same for national and international students.

The lack of student financial support also affects access and completion of higher education. Finances are cited as one of the main reasons (46.1%) why students consider dropping out of higher education (SEP, 2017[12]). There is no federal public student loan scheme (although a few states provide students loans) and the existing government scholarships and grants only benefit around 20% of students (OECD, 2017[13]) (see

Chapter 6). Private universities should provide scholarships to at least 5% of their students in licensed programmes (Mexican Federal Government, 2017[14]).

Admissions processes

In addition to the upper secondary qualification, all higher education institutions have the freedom to establish additional admissions criteria and processes for their programmes. As a result, there is a very wide range of entry criteria, requirements and evaluation instruments applied to Mexican and international students.

Some institutions apply an open system without additional requirements. The most prestigious institutions and programmes are more selective and apply additional selection criteria. Academic records and interviews are the most typical admissions criteria for all levels, and a bachelor's qualification, along with a research concept or proposal, is common for master's and doctoral programmes (Table 3.3).

Table 3.3. Most common admissions criteria for higher education

Access level	Common requirement	Usual criteria for admission	Potential admission tests
Short-cycle programme (ISCED 5) and bachelor's programme (ISCED 6)	Secondary education qualification (ISCED 3)	Academic record Interview	CENEVAL test (EXANI-II) College Board test (PAA) Institutional test
Master's programme (ISCED 7)	Bachelor's degree qualification (ISCED 6)	Academic record Interview Research concept/ proposal	CENEVAL test (EXANI-III) HEI own test
Doctoral programme (ISCED 8)	Master's degree qualification (ISCED 7) (for some master's programmes, the bachelor's degree needs to be in a specific area)	Interview Curriculum Vitae Research proposal Recommendation letters Full-time commitment (required or preferred)	CENEVAL test (EXANI-III)

Source: OECD compilation based on information provided by SEP.

Some higher education institutions also apply either their own or existing standardised admission tests. The most common standardised tests to evaluate discipline knowledge are the National Evaluation Centre (CENEVAL) tests (Box 3.3) and the College Board tests. Admission to certain programmes also requires specific tests, e.g. English language tests such as the EXUBI (*examen de ubicación del idioma*); mathematics tests such as the EDM (*exámen diagnóstico de matemáticas*); or language tests such as the EHLL (*exámen de habilidades lingüísticas y lógicas*). Some institutions also administer intelligence and psychometrics tests, such as the Terman-Merril test.

For students who do not reach the minimum admissions criteria, some public and private higher education institutions offer preparatory courses to help them to prepare for the admission tests. These are offered either as an extra preparatory semester or year, as an additional course during the first semester of their programme, or as a summer course before students enter higher education.

Box 3.3. *Centro Nacional de Evaluación* (CENEVAL) admissions exams

EXANI-II: CENEVAL exam to access bachelor's programmes

EXANI-II tests the skills and knowledge of particular academic fields of students who apply for a bachelor's programme. It includes two tests:

- EXANI-II Admissions test: A three-hour test with 110 questions that assesses students' aptitudes and skills in analytical thinking, mathematical thinking, reading comprehension and language structure.
- EXANI-II Diagnostic test: A one and a half-hour test with 88 questions that measures the discipline specific knowledge that is essential for students to enter the programme for which they have applied.

In 2016, 756 956 applicants took the EXANI-II test. The majority of applicants (81%) were seeking admission to public higher education institutions.

EXANI-III: CENEVAL exam to access postgraduate programmes

EXANI-III assesses the knowledge and skills of students who apply to a postgraduate programme, including their ability to respond to complex and varied situations. It assesses the ability to identify, systematise, classify, integrate and interpret information in situations that require a strategy to make inferences, derive conclusions and solve problems.

The test gives equal importance to all the following areas: mathematical thinking, analytical thinking, language structure, reading skills, project methodology, English reading and English grammar. EXANI-III is a four and a half-hour test with 160 questions.

In 2016, 29 835 applicants took the EXANI-III test. The majority of applicants (87%) were seeking admission to public higher education institutions.

Prospective students applying to master's programmes may also be asked to undertake certain additional tests, but these are not compulsory in all higher education institutions. For example, some institutions use the Postgraduate Admission Test (*Prueba de Admisión a Estudios de Posgrado,* PAEP), which was developed by the Monterrey Institute of Technology (ITESM). This test measures the verbal reasoning, quantitative reasoning and cognitive ability of candidates, as well as drafting skills in English.

Agreement 296 (published in the *Official Gazette* on 30 October 2000) provides a formal mechanism to recognise prior learning (*reconocimiento de saberes adquiridos,* RSA) acquired outside the Mexican education system (i.e. in informal or non-formal settings or in a different type of formal education) as a basis for admission to different levels of education. However, while recognition of prior learning is regulated and administered by the federal government in consultation with selected public higher education institutions, it is not commonly used in Mexico.

Agreement 286 also allows international students or Mexican students who completed higher education studies abroad to apply for the recognition of their qualifications acquired outside Mexico. This process provides access to a professional licence (*cédula profesional*) (see Chapter 6) or further studies in Mexico.

Pathways within the higher education system

Students who wish to move from one type of higher education institution to another, or to a different programme, must apply directly to the institutions, which assess applications on a case-by-case basis. A small number of higher education institutions have agreements in place to recognise each other's qualifications and studies, thereby facilitating pathways for their students. However, the absence of a national credit recognition and transfer system makes moving between institutions and programmes very difficult. The complexity of the system presents a significant barrier to the creation of such a scheme that would facilitate movement between institutions. This can make it difficult for students to change programmes when they realise that their initial choice of programme does not suit their capabilities or interests, or that it has poor labour market outcomes.

Some steps have been taken to develop a national credit accumulation and transfer system. In 2007, ANUIES designed and suggested a System to Assign and Transfer Academic Credits (*Sistema de Asignación y Transferencia de Créditos Académicos*, SATCA), but it has not implemented. In 2009, efforts by the three technological direct provision subsystems resulted in the Common Space for Technological Higher Education strategy (*Espacio Común de la Educación Superior Tecnológica,* ECEST). This strategy has facilitated credit transfer agreements between institutions, but its implementation has been incomplete, and student transfers remain complicated.

In addition, some higher education programmes at different levels, or even at the same level, are not connected. There is no path between short-cycle tertiary education programmes (ISCED 5) and bachelor's programmes (ISCED 6). Similarly, there are no pathways between the specialisation master's programmes (one-year ISCED 7) and master's programmes (two-year ISCED 7). These barriers can prevent students from continuing their studies and gaining higher level qualifications that are likely to position them better for the labour market.

Student population

Participation in higher education has grown from 1% of the population (below 30 000 students) in 1950 to 22% of the 20-24 year-old population in 2017 (4.5 million students in 2017). However, there are still considerable differences by socio-economic background, as almost half of the student population (46%) belongs to the wealthiest quintile, with this share even higher for students in private universities (CEDLAS and World Bank, 2017[9]).

Students enter higher education on average at the age of 20 (OECD, 2018[1]), and almost 90% are enrolled in bachelor's programmes. Enrolments in other higher education levels is below the OECD average: 4.6% of students undertake short-cycle programmes (half the OECD average); 6.4% are enrolled in master's or master's specialisation programmes; and 0.9% are enrolled in doctorate programmes. Enrolments at the postgraduate level have doubled since 2000 (SEP, 2017[2]).

Table 3.4. Enrolment by ISCED level, 2016-2017

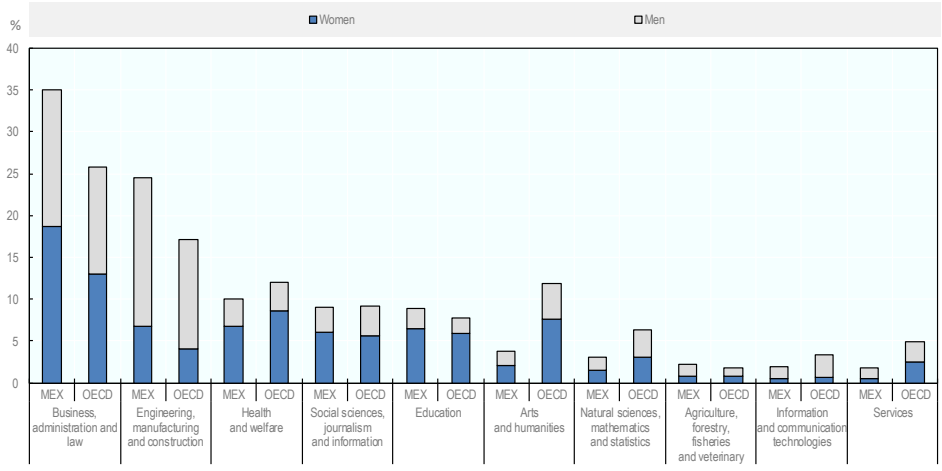
ISCED level	Name of qualification	Length of programme	% total enrolment
ISCED 5: Short-cycle programme	Associate technical degree (*técnico superior universitario*) or associate professional (*profesional asociado*)	2 years	4.6%
ISCED 6: Bachelor's programme	University bachelor's degree (*licenciatura universitaria*)	4 to 5 years	86.6%
ISCED 6: Bachelor's programme	Institute of technology bachelor's degree (*licenciatura tecnológica*)	4 to 5 years	
ISCED 6: Bachelor's programme	Teacher education bachelor's degree (*licenciatura educación normal*)	4 to 5 years	2.5%
ISCED 7: Master's programme	Master's specialisation degree (*especialización*)	0.5 to 1 year	1.2%
ISCED 7: Master's programme	Master's degree (*maestría*)	2 years	4.2%
ISCED 8: Doctoral programme	Doctoral degree (*doctorado*)	3 to 5 years	0.9%

Source: Key Figures 2016-2017 (SEP, 2017[2]).

StatLink http://dx.doi.org/10.1787/888933880565

Over 50% of the student population is enrolled in two fields of study: 34% in business administration and law programmes and 23% in engineering, manufacturing and construction. Enrolments in these fields of study are higher in Mexico than in other OECD countries (Figure 3.4). At the same time, the percentage of students in health, welfare, arts and humanities is lower than the OECD average.

Figure 3.4. Distribution of new entrants by field of study, all students and female students, Mexico and OECD average, 2016



Source: OECD (2018) Education at a Glance.

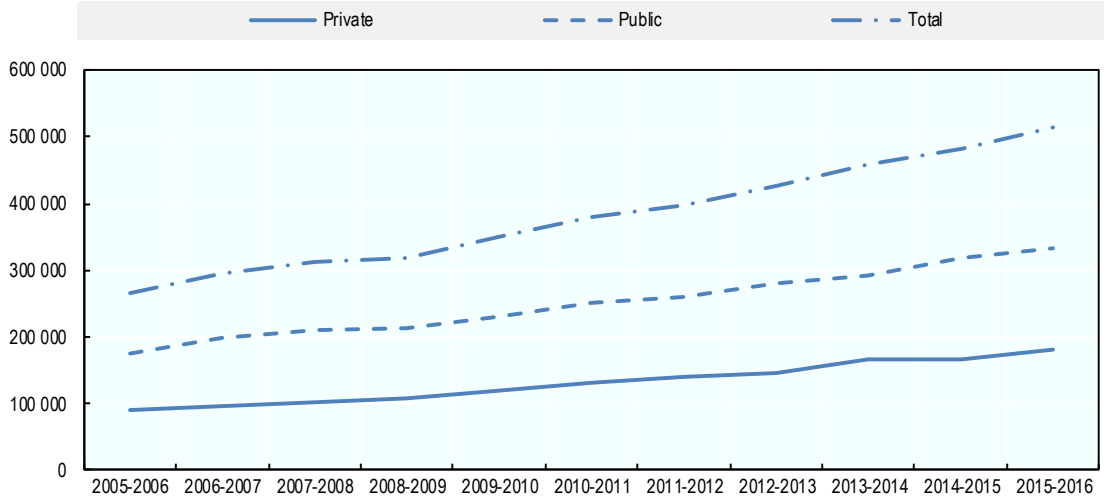
StatLink http://dx.doi.org/10.1787/888933880584

After decades of constant growth, half of students currently enrolled in higher education are female, with 54.6% in postgraduate programmes. Some fields of study attract a much higher proportion of female students: education (73% of new entrants), health and welfare (65%), and social sciences, journalism and information (66%). The percentages of female

new entrants in information and communication technologies (ICT) (28%) and in engineering, manufacturing and construction (27%) are the lowest, but still above the OECD average of 20% and 22% respectively (OECD, 2018[1])

Approximately 67% of students are in public and 33% in private higher education institutions. Private higher education institutions have a larger share of students enrolled in master's programmes, and public institutions host most of the students enrolled in short-cycle programmes. Most students are enrolled in face-to-face programmes, but an increasing number of students (currently 15%) are enrolled in open or distance education, mainly in private institutions (25%).

Figure 3.5. Trend in number of graduates from private and public higher education institutions in Mexico, 2005-2016



Source: SEP (2017) longitudinal data on higher education enrolment.

StatLink http://dx.doi.org/10.1787/888933880603

Mexico has a very low number of international students, around 12 500, who account for only 0.3% of the total student population (OECD, 2018[1]); most (98%) come from neighbouring countries. Outward mobility is also low, with very few (0.8%) Mexican students studying abroad, predominantly in the United States.

It is estimated that 69.4% of students enrolled in face-to-face undergraduate programmes complete their studies within a five-year period (Mexican Federal Government, 2017[15])[2]. In addition to financial reasons, more than one-third (37.4%) considered discontinuing a programme because of a lack of interest in their studies (SEP, 2017[12]).

The number of graduates is rapidly increasing, particularly those from public higher education institutions (Figure 3.5), with over half a million graduates entering the labour market annually. Mexicans graduate from their first degree on average at the age of 24.5,

[2] The threshold of five years applies to undergraduate students enrolled in a programme of any duration (from 2-year short-cycle tertiary education programmes to 5-year bachelor's programmes). This rate excludes undergraduate students who are enrolled in online or distance programmes (15% of the total enrolment).

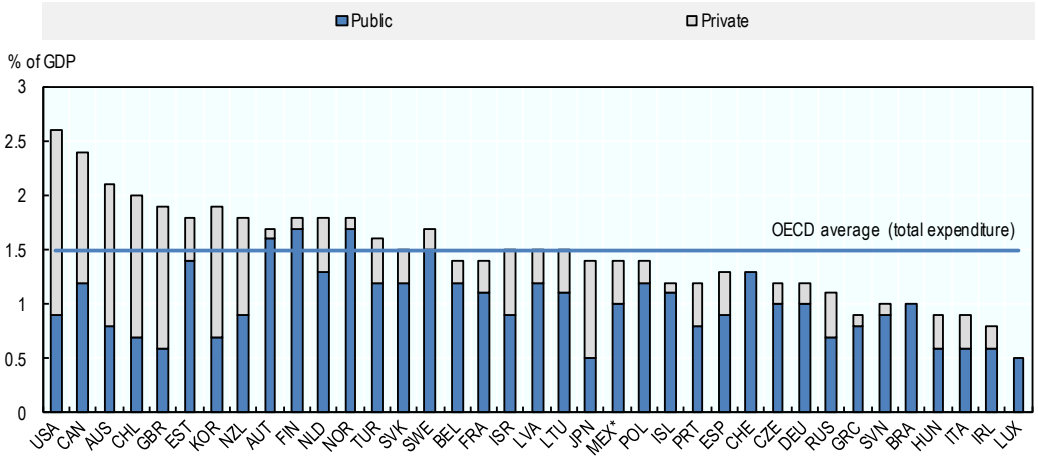
and 93% graduate before the age of 30 (OECD, 2018[1]). The percentage of higher education holders has almost doubled over the last 30 years, however, only 17.4% of the Mexican workforce holds a higher education degree, which is the lowest percentage among OECD countries (average 36.9%) (OECD, 2018[1]).

The country's higher education attainment rate in likely to continue increasing in the future (Crespo and García, 2014[16]); (Sagarra, Mar-Molinero and Rodríguez-Regordosa, 2014[17]), and currently 26% of Mexican youth are expected to get a higher education degree at some point in their lives (OECD, 2017[13]).

Expenditure on higher education

Higher education expenditure in Mexico (1.4% of GDP) remains stable and slightly below the OECD average of 1.5% (Figure 3.6). Mexico prioritises higher education in total public expenditure (3.1% - excluding R&D), which is above the OECD average (2.3%) (OECD, 2018[1]). However, while overall expenditure on higher education has grown 71% since 2000, the number of students has grown even more (109%), meaning that the expenditure in higher education per student has dropped 18% (ANUIES, 2017[18]). Expenditure per student (which includes funding for teaching, research and engagement) is currently at USD 8 170 – the third lowest among OECD countries (above Greece and Chile) and, far below the OECD average (USD 15 656) (OECD, 2018[1]).

Figure 3.6. Public and private expenditure on higher education institutions as a percentage of GDP, 2015



Note: Countries are ranked in descending order for the total of public and private expenditure on higher education institutions as percentage of gross domestic product.
Source: OECD (2018) Education at a Glance.

StatLink http://dx.doi.org/10.1787/888933880622

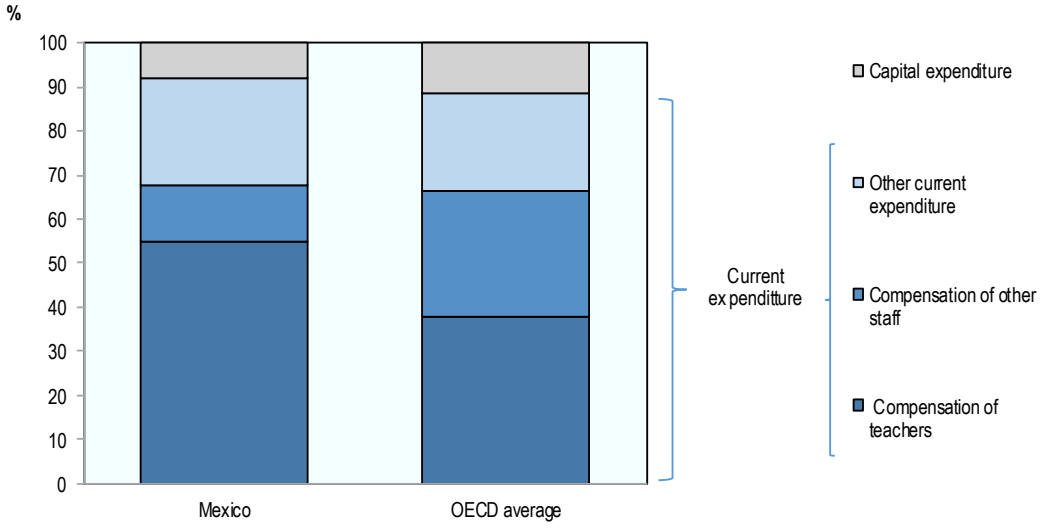
Expenditure per student varies markedly by subsystem. In 2016, direct provision subsystems received the least funding per student: technological and polytechnic universities (MXN 24 000/USD 1 250), decentralised institutes of technology (MXN 29 000/1 530 USD) and federal institutes of technology (MXN 37 000/1 950 USD). The subsystems receiving the largest funding per student were public state universities (MXN 56 000/2 950 USD) and federal state universities (MXN 118 000/6 260 USD) (ANUIES, 2017[18]).

Expenditure on higher education from both public and private sources has increased, with shares similar to the respective OECD averages. In 2014, private sources accounted for 29% of higher education expenditure, with 71% from public sources (slightly above the OECD averages of 30% and 70%, respectively). All private expenditure on higher education in Mexico came exclusively from households, whereas across OECD countries, 10% was provided by other private sources.

In Mexico, 77% of public funding comes from the federal government, and state governments provide the remainder; whereas the central and state/local ratio across OECD countries on average is 85% to 15% (OECD, 2017[13]). However, the contribution of the Federal government highly varies by state, from 44 to 90% (ANUIES, 2017[18]). Federal funding for higher education in Mexico has decreased by 10% over the last decade (OECD, 2017[13]). Some state governments have not been able to fulfil their financial commitments for higher education and the federal government has had to increase its share.

The majority of public expenditure for higher education in Mexico is used for current expenditure (92%), which is slightly above the OECD average (89%). Although the total compensation of staff is at the same level as the OECD average, Mexico spends a large share of its budget on academic staff (55%) and a low share on other staff (13%) (Figure 3.7). Within the OECD, only Austria spends more on academic staff as a share of higher education expenditure.

Figure 3.7. Distribution of current expenditure by resource category, 2014



Source: OECD (2018) Education at a Glance.

StatLink http://dx.doi.org/10.1787/888933880641

Governance of the higher education system

Steering higher education

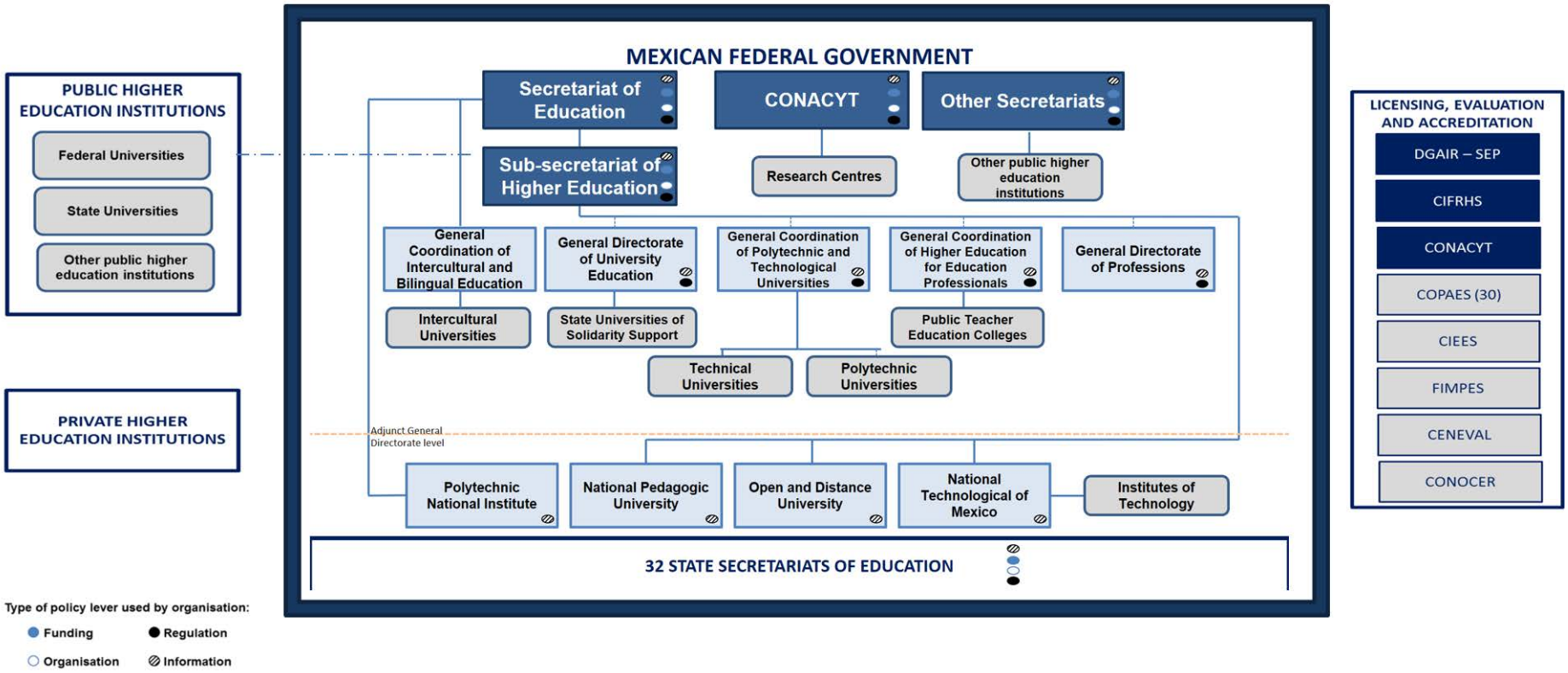
The federal and state governments share responsibility for the governance, regulation and co-ordination of higher education in Mexico (Figure 3.8). SEP designs and implements national policy and plans in collaboration with other federal government institutions. It provides funding directly or indirectly to all types of public higher education institutions; 82% of higher education public funding is federal funding (OECD, 2017[13]). SEP also co-ordinates the two levels of government (federal and state) in overseeing and planning higher education, including consultations with social partners and broader stakeholders. For this purpose, there are offices of SEP in each state that act as intermediaries between the federal and state governments.

SEP is also responsible for issuing individual professional licences (*cédula profesional*) for 27 regulated professions and for non-regulated professions, in consultation with professional bodies. The federal government also licenses programmes to operate within the national higher education system (*Reconocimiento de Validez Oficial de Estudios,* RVOE).

The state secretariats of education are responsible for co-ordinating higher education and implementing policies at the state level. Some of them also award professional licenses. State governments provide, on average, 18% of higher education funding, but this share varies greatly. Until 2000, most states operated State Councils for Higher Education Planning (*Consejos Estatales para la Planeación de la Educación Superior*, COEPES). These councils advised the state secretariats of education on strategic issues, supported policy development, and collected indicators to assess and evaluate proposals for the establishment of new higher education institutions and programmes. Although some state governments discontinued the funding, others have continued to fund and operate the councils.

Since 2004, federal and state governments have worked together on education matters through the National Council of Educational Authorities (*Consejo Nacional de Autoridades Educativas,* CONAEDU). The members of CONAEDU are the federal SEP(chair) and the 32 state secretaries of education. CONAEDU develops and builds consensus around education policy, which contributes to the development and reinforcement of the National Education System, particularly the planning and assessment schemes. The Council operates in chapters corresponding to the different levels of education. The higher education chapter has not been effective and has not held any meetings in the last six years, however, the upper secondary education chapter has been more successful.

Figure 3.8. Diagram of the Mexican higher education system



Source: OECD compilation based on information provided by SEP.

Regulation of the higher education system

The regulatory framework for higher education in Mexico comprises several types of legal document that regulate aspects of the system.

At the highest level, the Mexican Constitution (*Constitución Política de los Estados Unidos Mexicanos*) states that the government supports the national secular education necessary for national development and guarantees free public education. It also recognises educational freedom, stating that any person or organisation can deliver private education at all levels. However, programmes delivered by private higher education institutions require official recognition by the Federal or State Secretariat of Education to be part of the national education system.

The federal Education Act (*Ley General de Educación,* LGE) is the main document that regulates the education system. This act establishes the actors of the national education system and defines federal and state responsibilities regarding education. However, it applies mainly to primary and secondary education, with little reference to higher education. All Mexican states have a state education act that specifies the responsibilities of the state government, but most state legislation does not include sections on higher education.

The Higher Education Co-ordination Act (*Ley para la Coordinación de la Educación Superio*r) was enacted in 1978. It regulates and co-ordinates tasks and funding between federal, state and local governments. The act aims to create greater diversity in the higher education subsystems, thus ensuring better alignment with national, state and local needs, and contributing to local and regional development. Co-ordination, operation and financial assistance agreements between the federation, states and institutions are derived from this act.

Autonomous higher education institutions are established through federal or state general acts (*Leyes Orgánicas*), while direct provision higher education institutions are established through organic statutes (*Estatutos Orgánicos*) or decrees (*Decretos*). These acts or decrees establish the rights, governance structures and assets of the institution. Co-ordination, operation and financial assistance agreements (*Convenios de Coordinación, Operación y Apoyo Financiero*) established between the federal government, the state governments and each of the public state universities (including those of solidarity support), form the basis for organising, funding and operating higher education institutions.

The Internal Regulation of SEP (*Reglamento Interior de la Secretaría de Educación Pública*) details the roles and responsibilities of the secretariat and its decentralised agencies. Additional regulatory instruments include the licence for official validation of studies (RVOE) (secretarial agreement 17/11/17), procedures related to the recognition of official validation of higher education studies (secretarial agreement 279), and the conditions for the recognition of acquired knowledge for ISCED 6 level (secretarial agreement 286).

Other important laws concerning higher education include the Science and Technology Act (*Ley de Ciencia y Tecnología*), which describes the responsibilities of the federal government related to science and technology and names the actors of the national science and technology system. For graduates, the Regulatory Act in Article 5 of the Constitution (*Ley Reglamentaria del Artículo 5º Constitucional*) regulates graduate jobs in all states, including their rights, obligations and regulatory framework. In addition, the

Federal Labour Act (*Ley Federal del Trabajo*) and the Federal Labour Act for State Workers (*Ley Federal de los Trabajadores al Servicio del Estado*) regulate the employment relationships of staff in all public and private higher education institutions.

The Planning Act (*Ley de Planeación*) facilitates the co-ordination of planning activities between the executive branch of government and the states. It regulates the establishment of a National Development Plan (*Plan Nacional de Desarrollo*) and sectoral programmes, such as the Education Sectoral Programme (*Programa Sectorial de Educación*), every six years.

SEP formulates the Education Sectoral Programme in collaboration with other federal and state agencies and higher education institutions. The programme details strategic targets, goals, objectives, policies and guidelines for the period (SEP, 2013[19]) (Box 3.4). It also provides a guiding framework for state governments (including their agencies) and autonomous public and private higher education institutions, with which the Federal Government (and its decentralised agencies) must comply.

Box 3.4. Education Sectoral Programme 2013-2018

The main aim of the Education Sectoral Programme's 2013-2018 edition is to provide quality education, which is understood as "equitable, relevant, flexible, innovative, diversified and with ample coverage." It establishes the following six major goals:

- Objective 1: Ensuring the quality of learning in basic education and ensuring education for the whole population.
- Objective 2: Strengthening the quality and relevance of upper secondary and higher education, as well as on-the-job training, so that students can develop the skills they need to contribute effectively to Mexico's development.
- Objective 3: Ensuring greater coverage, inclusion and educational equity among all groups of the population in order to build a more inclusive society.
- Objective 4: Strengthening the practice of sports activities as a component of integral education.
- Objective 5: Promoting and disseminating art and culture as important learning resources to achieve comprehensive education.
- Objective 6: Promoting scientific and technological education as an essential element for the transformation of Mexico into a knowledge society.

Source: (SEP, 2013[19]).

These laws, regulations, decrees and agreements, along with internal administrative manuals, direct higher education institutions in their daily operations. However, the multiple legislative instruments relating to higher education, some of which lack sufficient detail or clarity, make the regulation of the 13 higher education subsystems complex and difficult to navigate. Although there have been several attempts to reform the regulatory framework in recent years, there has not been sufficient consensus to establish new laws for higher education.

Agencies involved in quality assurance

The quality assurance system in Mexico is complex and fragmented (Figure 3.10). There is no national quality assurance system or agency to license, assess or accredit higher

education institutions, programmes and individuals. Instead, multiple agencies operate with different reference frameworks, criteria, indicators, standards and measurement tools. A federal commission, which was reactivated in mid-2017, co-ordinates all the agencies active in higher education quality assurance (*Comisión Coordinadora de Organismos de Evaluación de la Educación Superior,* COCOEES); however, there are no tangible results yet. The use of the various quality assurance mechanisms through these multiple agencies is optional and voluntary. In addition, they are not applied consistently across the subsystems.

Figure 3.9. Quality assurance of higher education in Mexico

Agency	Type				Institution		Programmes							
							Public		Private					
	License	Assessment	Accreditation	Certification	Public	Private	Undergrad	Postgrad	Undergrad	Postgrad	Researchers	Students	HEI Functions	Accreditation Agencies
SEP-DGAIR	X								X	X				
COPAES			X											X
COPAES-AGENCIES			X				X		X					
CIIES		X					X	X	X	X			X	
CONACYT			X					X		X	X			
CIFRHS (health)		X			X	X	X	X	X	X				
FIMPES			X			X								
CENEVAL		X					X		X			X		
CONOCER				X								X		

Source: OECD compilation based on information provided by SEP.

Accreditation of institutions

Public higher education institutions in Mexico do not require any form of institutional accreditation. The Federation of Mexican Private Higher Education Institutions (*Federación de Instituciones Mexicanas Particulares de Educación Superior,* FIMPES) is a membership organisation for private higher education institutions. Institutions that wish to become a member must undergo an institutional assessment aimed at differentiating them from other private institutions. Since 2003, higher education institutions that are members of FIMPES enjoy simpler administrative procedures with education authorities, such as simpler approval processes for the award of a RVOE on new programmes.

Some private institutions are accredited by foreign agencies, such as the Southern Association of Colleges and Schools (SACS) or the Western Association of Schools and Colleges (WASC) in the United States.

Accreditation of institutional functions

Mexican higher education institutions can also seek accreditation for various functions through two agencies. The Inter-institutional Committees for the Evaluation of Higher Education (*Comités Interinstitucionales para la Evaluación de la Educación Superior,* CIEES) accredits the administration, culture and engagement functions of public and private higher education institutions for five years, renewable for another five (CIEES, 2017[20]). Similarly, using an evaluation focused on infrastructure, the Commission for the Education of Human Resources in the Health Sector (*Comisión Interinstitucional de Formación de Recursos Humanos en Salud*, CIFRHS) determines whether public and private institutions can offer health programmes.

License of programmes

Study programmes in private higher education institutions that are part of the national education system are licensed and officially recognised through the "validation of studies" (*Reconocimiento de Validez Oficial de Estudios*, RVOE). SEP grants the RVOE that allows a programme to be delivered across the 32 states in Mexico (Secretarial Agreement 17/11/17). State governments can grant RVOEs for programmes delivered by institutions located in the respective state, but criteria and procedures vary from one state to another. State public universities (12) and federal universities (2) can also incorporate programmes delivered by private higher education institutions as a way of licencing these programmes. Currently, 21 981 programmes offered by 1 918 private institutions hold a RVOE.

The granting authority is responsible for the supervision and oversight of the educational services that they have authorised and recognised. Programmes with a RVOE can be the subject of one-off inspections by the granting authority to assess whether the agreed conditions for provision are being respected. A negative review can result in the removal of the RVOE, but these inspections rarely occur due to a lack of resources, so only two RVOEs were withdrawn in 2017.

Programmes with RVOE approval must meet basic conditions in relation to staff, infrastructure and programmes. However, these conditions are different in each state and at the federal level. SEP has strengthened the conditions to grant RVOEs through the Secretarial Agreement 17/11/17, however, stakeholders still have concerns about the effectiveness of RVOEs regarding its ability to ensure a minimum level of quality and to carry out periodic monitoring.

An unknown number of higher education programmes are offered outside of the national education system (i.e. without RVOE). Higher education institutions must inform students if the programme does not have a RVOE, and the list of programmes with a RVOE is available on the SEP website. The website does not include programmes undergoing approval for the award of the RVOE.

The RVOE is also linked to the award of a professional licence (*cédula profesional*) as only graduates of programmes in the national education system can obtain a professional licence. The professional licence is an important credential in the labour market and essential for regulated professions. The RVOE is also used as criterion for admission to a higher level of study in a public or private higher education institution. However, over a quarter (37.5%) of all students who completed their bachelor programme courses (*egresados*) did not obtain a professional licence (*titulados*).

Accreditation of programmes

The Higher Education Accreditation Council (*Consejo para la Acreditación de la Educación Superior*, COPAES) was established as a non-profit organisation in 2000 to recognise and oversee accreditation agencies responsible for undergraduate programmes. There are currently 30 accreditation agencies licensed by COPAES, which establishes general guidelines for the accreditation agencies to follow and adapt to specific fields of study. The accreditation agencies are licensed to operate for five years, with the possibility of renewal. Undergraduate programmes provided by public higher education institutions, or those in private higher education institutions with a RVOE, can apply to be accredited by these agencies for five years (COPAES, 2017[21]). COPAES agencies have accredited 3 797 programmes in 393 institutions.

CIEES was established in 1991 as a non-profit organisation to provide external peer evaluations of undergraduate programmes in public higher education institutions, and programmes with a RVOE in private higher education institutions. Between 200 and 400 programmes are evaluated every year by the seven discipline specific committees and rated according to their quality - level one (recognised for five or three years) or level two (CIEES, 2017[20]). SEP categorises level one programmes as "quality programmes" and uses this as criteria for some targeted funding programmes, i.e. the proportion of students enrolled in "quality programmes" in an institution.

Since 2012, the number of students enrolled in programmes accredited by COPAES, or assessed as level one programmes by CIEES, has grown from 2.5 to 3.5 million. However, due to the large increase in higher education enrolments over recent years, the percentage of students in quality programmes has decreased from 63% in 2012 to 46% in 2017 (SEP, 2018[22]). Most accredited programmes are in large public universities.

The National Council for Science and Technology (*Consejo Nacional de Ciencia y Tecnología*, CONACyT), in collaboration with SEP, recognises postgraduate programmes at all higher education institutions through the National Programme of Quality Postgraduate Studies (*Programa Nacional de Posgrados de Calidad*, PNPC). The council uses peer reviews that assess the quality and relevance of programmes, including their results and impacts, and classifies the recognised programmes into four levels: recently created, in development, consolidated and international competence (CONACyT, 2017[23]). Currently, 2 295 programmes are recognised in the PNPC and the most common fields of study are engineering (21.8%), medicine and health sciences (19.2%) and social sciences (18.5%) (CONACyT, 2018[24]).

The Inter-institutional Commission for the Education of Human Resources in the Health Sector (*Comisión Interinstitucional de Formación de Recursos Humanos en Salud*, CIFRHS) is an advisory and technical organisation under the Secretariat of Health, established in 1983. CIFRHS sets the requirements for institutions providing education and training in health fields of study. It assesses the education and training needs for the health sectors, promotes initiatives to ensure the distribution of human resources in different health professions, and promotes initiatives that link teaching, practice and research. The Commission also formally evaluates health programmes at all levels, and their providers. Representatives from the public, private and social sectors are represented in several committees of this commission (CIFRHS, 2017[25]).

Accreditation of academic staff research performance

All tenured academic staff in Mexican higher education institutions have contracts that include teaching, research and engagement responsibilities. CONACyT also accredits the research performance of individual academic staff in all institutions through the National System of Researchers (*Sistema Nacional de Investigadores,* SNI). Created in 1984, this system uses peer reviews to rank researchers in three levels depending on their research performance, technology transferred to external organisations and teaching hours. The quality of teaching is not measured. The SNI classification level affects researchers' earnings.

Assessment and certification of student skills

The National Centre for Higher Education Assessment (Centro Nacional de Evaluación para la Educación Superior, CENEVAL) assesses the knowledge, skills and competences of students. The centre was created in 1994 as a non-profit association to design and administer standardised tests to students. It analyses and disseminates the results of the tests. CENEVAL's General Assembly, led by a general director, includes representatives of higher education institutions, professional associations, social organisations and SEP representatives (CENEVAL, 2017[26]).

Specific skills of the overall population can be certified by the National Council of Standardisation and Certification of Labour Competencies (*Consejo Nacional de Normalización y Certificación de Competencias Laborales,* CONOCER). In 2017, CONOCER awarded 526 000 certificates, the majority in ICT skills. An increasing number of higher education students are seeking labour-oriented certificates to complement their academic degrees, and over a third of these certificates in 2017 were awarded to higher education students or graduates.

Funding the higher education system

Both the federal and state governments fund higher education. They allocate a block grant (ordinary funding) to all public higher education institutions to support regular institutional operations. The block grant funding is approximately 90% of the total funding and is allocated based on previously approved input costs, including a basic amount and cost adjustments for compensation of staff and operating expenses. However, the final amount of the block grant is subject to an annual negotiation between individual higher education institutions and the government.

The share of block grant funding from the federal and state governments is established in a three-party agreement between the federal government, the state government and the public higher education institution. However, the share of the federal government funding greatly varies by state, subsystem and institution, ranging from 45% to 88%, which generates tensions across the system.

The block grant funding for state institutes of technology, technological universities, polytechnic universities and intercultural universities is equally shared between the federal and state governments. However, in some cases state governments have not complied with their funding commitments and have paid institutions late, partially, or have not paid their contribution. This has generated tensions between both levels of government and the institutions.

SEP also provides targeted funding (extraordinary funding) for specific purposes based on explicit criteria. Institutions seeking targeted funding must submit a proposal that is

assessed by SEP or an expert panel (see Chapter 6). CONACyT also allocates competitive funding to institutions through a set of funding programmes to support research and postgraduate programmes recognised as high quality in the PNPC.

The federal government has provided additional targeted funding through the Programme of Expansion of Educational Supply to support infrastructure, equipment, current expenses and new academic positions. However, this programme has not granted any funding in 2018.

In addition, all higher education institutions are funded, to a different extent, by private sources. These are almost entirely from households (e.g. tuition fees), but a small share comes from other private sources (e.g. payments from firms and non-profit organisations for diverse services, such as training or work-based learning).

Information on the higher education system

The Mexican government uses data to monitor the higher education system and develop policy. It disseminates the information it collects to stakeholders. SEP collects annual data on the number of higher education institutions, campuses, and licensed programmes (i.e. those with a RVOE), and enrolments in licensed programmes. This data is provided by higher education institutions in a standardised form and is publicly available on the government website. It is also published annually (together with data on other education levels) in the "Education of the United Mexican States: Main figures" report (SEP, 2017[2]).

SEP also collects information and enrolment data from higher education institutions on programmes that have been accredited and evaluated by COPAES, CIEES and CONACyT. The list of undergraduate programmes and enrolment data is compiled with COPAES and CIEES and published monthly on the Secretariat's website. The list of PNPC postgraduate programmes is published on CONACyT's website. In addition, CENEVAL publishes a list of programmes that have achieved outstanding results in CENEVAL tests.

SEP also publishes a list of higher education graduates who have obtained a professional licence. Graduates are identified with a unique number and anyone can search a person by name and obtain their professional licence details.

In addition to government information, the largest Mexican university association, the National Association of Universities (*Asociación Nacional de Universidades de Educación Superior,* ANUIES), provides comprehensive information on the national higher education system through its online National Directory of Higher Education Institutions. The directory provides basic information about campuses, schools, research centres, programmes, tenured academic staff and main administrative staff.

Focused on higher education outcomes, the Secretariat of Employment provides information on the labour market outcomes of higher education graduates. The annual *Labour Observatory* publication (*Observatorio Laboral)* presents information on graduates' employment status, sector, salaries, and positions based on the Mexican Labour Force survey data.

No agencies collect or publish information on graduate outcomes via surveys or information on the student experience or employer views of graduate skills.

Organisation of the higher education system

Every six years, the federal government is required to consult the public to develop a National Development Plan. This plan provides the basis for the Federal Government's Sectoral Education Programme. To develop this plan, SEP is also required to consult stakeholders across government (e.g. the Secretariat of Health and the Science and Technology Forum), as well as outside government.

Box 3.5. Main stakeholders consulted by the Mexican Government in higher education matters

SEP consults several stakeholders, through personal meetings and seminars, to design policy levers and keep informed of the practices and needs of higher education institutions and employers. The main stakeholders consulted are:

- **The National Association of Universities (*Asociación Nacional de Universidades de Educación Superior,* ANUIES)** represents 191 public and private higher education institutions, including the largest institutions, and over 60% of total student enrolment. ANUIES aims to improve education, research and engagement, and actively participates in the development of public policies, programmes and plans, often acting as the intermediary between higher education institutions and the government. ANUIES runs a series of specialised networks, workshops and scholarship schemes in co-operation with, or on behalf of SEP. To be a member of ANUIES, institutions need to fulfil a set of quality requirements. ANUIES members that meet even higher quality requirements constitute a subgroup of ANUIES called the Mexican Consortium of Universities (*Consorcio de Universidades Mexicanas,* CUMex).
- **The Federation of Mexican Private Higher Education Institutions (*Federación de Instituciones Mexicanas Particulares de Educación Superior,* FIMPES)** was established 1982 and is made up of 108 private higher education institutions that comprise 18% of students enrolled in higher education and around 50% of those enrolled in private higher education. FIMPES aims to improve communication and collaboration among members and with other higher education institutions. In order to join and remain in FIMPES, institutions need a quality accreditation from an independent commission of academic staff.
- **The Business Co-ordinating Council (*Consejo Coordinador Empresarial,* CCE)** presents the views of several business associations from different sectors to the government and other organisations. The council aims to design policies that raise the competitiveness of companies, and the country in general, in the hopes of contributing to economic growth. CCEs outreach to the higher education system happens through its Education Commission.

The main non-governmental organisations consulted in the development of the higher education elements of the Sectoral Education Programme are the two largest umbrella organisations of higher education institutions (ANUIES and FIMPES), rectors of selected higher education institutions, national academies, chambers of commerce and the Business Co-ordinating Council (Box 3.5). The federal government's Sub-Secretariat for Higher Education develops its annual plan based on the Sectoral Education Programme.

Since 2015, the federal government has also developed a planning exercise for higher education in collaboration with the 32 state governments and individual institutions. The Comprehensive Planning of Higher Education (*Planeación Integral de la Educación Superior,* PIDES) has a strong collaborative approach based on several rounds of workshops and meetings with higher education institutions across the country.

Implications for labour market relevance

The structure and governance of the Mexican education system directly and indirectly influence its ability to develop graduates' skills and enhance the system's relevance for the labour market.

The number of students who can potentially access higher education in Mexico is likely to increase following the introduction of compulsory upper secondary education in 2013. The forecasted entry of more students, and the poor skills levels as measured by the OECD PISA programme and the national PRONAE survey, will put additional pressure on the higher education system as these students may need considerable support to succeed academically.

Access to higher education remains unequal due to diverse entry requirements and varied tuition fees across institutions. Students from low socio-economic backgrounds are more likely to study in lower-quality upper secondary schools and thus develop weaker skills. This leaves them with the only option of enrolling in less prestigious higher education institutions, which in many cases are private. Those who make the economic effort to enrol are more likely to drop out for academic or financial reasons, and those who graduate are likely to enter the labour market with lower skills.

Students in smaller towns and rural areas now have more opportunities to access higher education thanks to the establishment of additional public higher education institutions in these areas. However, the delivery of high-quality education in these areas is proving challenging as it is difficult to obtain sufficient funding and high-quality academic staff.

Students in the vocational upper secondary education strand are unable to access higher education and there are limited alternative pathways through the recognition of prior learning outside of higher education (e.g. in the labour market).

The higher education system has a number of rigidities which prevent pathways between short-cycle tertiary education (ISCED 5) and bachelor's programmes (ISCED 6), and between specialisation and master's programmes (ISCED 7). It is also difficult for students to change programmes or institutions, increasing the likelihood of dropping out of higher education.

The large concentration at the bachelor's level means that there are not many graduates with the technical skills developed through short-cycle tertiary education programmes (ISCED 5) or with advanced specialised skills developed in master's and doctoral programmes (ISCED 7 and 8). Having an insufficient number of workers with different skills levels in Mexico is a major barrier to productivity, diversification and sophistication of production (OECD, 2017[27]). The current funding system for public higher education institutions does not provide any incentives to offer a diverse range of programmes in terms of levels and fields of study.

A high-quality higher education system helps students develop strong knowledge and skills relevant to the labour market so that they can achieve good employment outcomes. Despite efforts to ensure quality across the Mexican higher education system, there are no

mechanisms to guarantee a minimum of quality. The quality assurance system is voluntary in nature, fragmented, unclear, overlapping, rigid and focused on inputs, without sufficient emphasis on quality in general and labour market relevance in particular. As a result, employers may not have the confidence that higher education graduates have the skills they need to perform well in their jobs.

There are significant gaps in the information collected on higher education and the labour market outcomes of students by the different agencies; this information is also difficult to access, as it is made available through a range of publications and on different agency websites. Students have difficulties deciding in which institution and programme to enrol, and employers face uncertainty about what skills to expect of graduates from different institutions and programmes.

The federal government's role to steer higher education is limited due to the insufficient regulatory framework, the large degree of autonomy of some subsystems, the involvement of multiple agencies, and the need for co-ordination with state governments.

Although the decentralised governance system represents an opportunity to align the provision of higher education with the different labour market needs of each state, the lack of co-ordination between the different government levels has caused tensions and fragmentation.

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Annex 3.A. Key student evaluation tests

Annex Table 3.A.1. Summary of Mexican students' results in key student evaluation tests

Variable	PISA 2015 (Mexico results)	PLANEA (2017)	EXANI-II (2016)	EXANI-III (2016)
Reporting organisation	OECD	National Institute for the Evaluation of Education (INEE)	CENEVAL	CENEVAL
Level of study	Secondary education	Secondary education	To access bachelor programmes	To access postgraduate programmes
Exams/modules	Language, mathematics and science	Language and communication and mathematics	Analytical thinking, mathematical thinking, reading comprehension, structure of language	Analytical thinking, mathematical thinking, reading comprehension, structure of language, English reading comprehension, English grammar use, and project methods
Points/grades	From below level 1 to level 6	From level 1 to level 4	From 700 to 1300 points	From 700 to 1300 points
Gender	Female students are better in language. Male students are better in mathematics and science.	Female students are better in language. Male students are better in mathematics.	Female students are better in structure of language and reading comprehension. Male students are better in analytical thinking and mathematical thinking.	Male students are better in analytical thinking, mathematical thinking, reading comprehension, English reading comprehension, English grammar use, and project methods. Female students are better in structure of language.
Parents' educational attainment level	Countries with more highly educated adults are at an advantage over countries where parents have less education. Parents' level of education accounts for 44% of the variation in mean performance between countries/economies.	The higher the education attainment of the parents, the higher the performance of the student. Also, students with at least one parent speaking an Indigenous	The higher the education attainment of the parents, the higher the performance of the student.	The higher the education attainment of the parents, the higher the performance of the student.

		language are more likely to be low performers than those whose parents do not speak an Indigenous language.		
Type of education institution	Advantaged, urban and private schools in Mexico tend to have better science-specific resources than disadvantaged, rural and public schools. These differences are among the largest across all OECD countries.	Students in autonomous upper secondary schools achieve the best results, followed by private, federal and state ones.	Private schools perform better than public schools in all areas.	Students from public institutions perform better in analytical thinking and mathematical thinking. Students from private institutions perform better in reading comprehension, language, English reading comprehension, English grammar use, and project methods.
Mexican states / rural vs urban	No data by state in 2015. Students who reported not attending school science classes are more likely to be in schools that are socio-economically disadvantaged and/or located in rural areas. However, in Mexico, there are no significant differences in performance between students who take at least one science course per week and those who do not. In Mexico, enrolment in vocational programmes is much more common among students in urban and public schools than among their peers in rural and private schools.	In the language and communication test: Mexico City, Nuevo León, Yucatán, Jalisco and Baja California were the states with the highest share of top performing students. Chiapas, Guerrero, Tabasco and Michoacán had the lowest performance. In the mathematics test: Aguascalientes, Jalisco, Querétaro, Nuevo León and Puebla had the best performance. Chiapas, Tabasco, Guerrero, Michoacán and Tamaulipas had the lowest performance.	Students from public institutions in Yucatán, Nuevo León, Querétaro, and Aguascalientes are the best performers. Students from public institutions in Tamaulipas, Tlaxcala, Sinaloa, Tabasco, and Guerrero are the worst performing. For private institutions, the best performing states are: Yucatán, Nuevo León, Querétaro, San Luis Potosí, and Mexico City. The worst performing states are: Tamaulipas and Guerrero.	
Education orientation	After accounting for students' and schools' socio-economic profile, students in vocational programmes score 20 points higher in science than students in academic programmes.		Students from international, general, intercultural, and technological upper secondary institutions are the best performers. Students	Students who studied higher education face-to-face perform better than students who undertook their education online

			from TV-assisted and community TV-assisted upper secondary institutions, as well as professional technician programmes, are the lowest performers.	and through other modalities.
Others	In Mexico, a more socio-economically advantaged student scores 19 points higher in science than a less advantaged student.	Age: students around the typical high school age (16 years or less) perform better than students over the typical age (17 years and above).	Students with more books at home are better performers.	Students with more books at home are better performers.

Source: OECD compilation from (OECD, 2015[5]) for PISA 2015; (INEE, 2017[7]) for PLANEA and information provided by CENEVAL for EXANI-II and EXANI-III (2016).