

Chapter 1. Assessment and recommendations

This chapter outlines recommendations for enhancing the labour market relevance and outcomes of the higher education system in Mexico. Each recommendation is accompanied by a policy rationale and a summary of key issues in Mexico. The recommendations, developed for the Mexican Secretariat of Public Education (Secretaría de Educación Pública, SEP), are structured under three headings: aligning higher education with the changing needs of the labour market, helping students succeed in higher education and the labour market, and co-ordinating the higher education system to enhance labour market relevance and outcomes.

Mexico has transformed itself over the last three decades from a relatively protected, oil dependent economy to a manufacturing, international investment and export centre (OECD, 2018^[1]). The country has successfully integrated into global value chains, mainly through the North American Free Trade Agreement (NAFTA), which has brought some economic benefits in terms of productivity, diversification and sophistication of production (OECD, 2017^[2]).

However, Mexico has not yet closed the productivity gap with highly developed economies, and its gross domestic product (GDP) per capita remains just as far behind the United States as it was in the 1990s, with GDP growth at about 2% per year, reflecting simple population growth. Productivity in small and medium enterprises (SMEs) and labour productivity are particularly weak; large productivity gaps exist in all sectors and between sectors.

Mexico's efforts to improve productivity have included opening up sectors such as telecommunications, electricity and oil to private participation, which are showing signs of some productivity increase (OECD, 2017^[3]). Mexico has also developed strategic plans to increase productivity for the retail, tourism and food sectors, which employ a large share of workers but have low productivity. These initiatives aim to increase competitiveness by focusing on a set of industries with high productivity and growth potential, i.e. automotive, agro-industrial, aerospace supply, and electric-electronics, and through research and development (R&D), technological innovation and complex business services.

Increasing productivity and competitiveness would allow Mexico to achieve greater integration into global value chains; however, its ability to do this is limited by the structure of the economy and labour market as there is a large share of informality, a dominance of micro-enterprises and traditional industries, large income inequality, low levels of R&D investment and activities, weak domestic research infrastructure, and an underdeveloped knowledge-based start-up environment (OECD, 2017^[2]). In addition, Mexico's efforts are hindered by the low skills levels of its population, along with inefficiencies in putting those skills to use. Levels of educational attainment are the lowest across OECD member countries, and there are quality concerns, with scores in the Programme for International Student Assessment (PISA) at the bottom of OECD countries. The OECD National Skills Strategy of Mexico identified improving the use of skills at work as one of the key challenges facing Mexico (OECD, 2017^[4]), including addressing issues around overqualification and the better alignment between skills and the labour market for higher education graduates

Education and skills are the foundation upon which Mexico must build future growth and prosperity (OECD, 2017^[4]). Higher education is fundamental to the development of the advanced knowledge and skills that are critical for modern economies. Through higher education, students develop advanced technical, professional and discipline-specific knowledge and skills, as well as transversal skills that qualify them for a range of occupations.

Mexico's higher education system is facing significant challenges in terms of quality and in ensuring that students develop labour market relevant skills so that they go on to achieve good labour market outcomes. Further progress in productivity and competitiveness will require improvements in the quality of education at all levels, from early childhood education to higher education. Addressing the quality of higher education and ensuring greater labour market relevance is therefore of vital importance for Mexico to achieve strong, inclusive and sustainable growth in a global economy.

The Mexican higher education system

The Mexican education system, from primary education to higher education, has grown exponentially since 1950, from 1 to 36 million students, reaching almost universal enrolment up to secondary education. However, a large number of students drop out of upper secondary education, with only 56.3% of Mexicans currently expected to graduate from this level of education (OECD, 2018_[5]).

Mexico's higher education system is large and has undergone rapid growth over 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 (3.8 million studying in face-to-face programmes and 0.6 million in distance or online programmes) in more than 7 000 campuses and close to 38 000 programmes (SEP, 2017_[6]). With 13 subsystems, the Mexican higher education system is highly complex and diverse. The subsystems differ considerably in terms of institutions, programmes, governance structures, funding arrangements, government dependence, and teaching and research intensity and quality.

In 2015, 89% of students in Mexican higher education were enrolled in ISCED 6 level programmes (*licenciatura*) (61%, OECD average), 4.5% in ISCED 5 short-cycle programmes (*técnico superior universitario and profesional asociado*) (20.4%, OECD average), 5.9% in ISCED 7 programmes (*especialización and maestría*) (16%, OECD average), and less than 1% (0.9%) in ISCED 8 doctoral programmes (*doctorado*) (2.4%, OECD average) (OECD, 2017_[7]).

The two most popular fields of study are law and business administration, with 35.1% of new entrants; and engineering, manufacturing and construction (24.4%), which are well above the OECD averages (23.3% and 16.5% respectively). Programmes in health and welfare are also relatively common (10.1% vs. 13% OECD average). Natural sciences, mathematics and statistics, as well as information and communication technologies (ICT), have low shares of entrants in Mexico (3.1% and 1.9% respectively), well below the OECD averages (6.5% and 4.6% respectively) (OECD, 2018_[5]).

Mexico currently has the lowest share of adults (25-64 year-olds) with a higher education degree across OECD countries (17%), well below the OECD average (37%), and lower than other countries in the region, such as Chile (23%), Colombia (23%), Costa Rica (23%) or Argentina (21%) (OECD, 2018_[5]). However, significant progress has been made in increasing higher education attainment levels in Mexico, and over the last 16 years, the share of young adults who completed higher education rose from 17% to 23%. If current patterns are maintained, 26% of young people in Mexico are expected to graduate from higher education at some point in their lifetime (OECD, 2018_[5]). Currently, over half a million higher education graduates enter the labour market every year.

Outcomes of higher education graduates in the labour market

Finding a job can be more difficult for young higher education graduates (25-34 year-olds) in Mexico than for their peers in other OECD countries. The employment of young graduates in Mexico (80.7%) is below the OECD average of 84.1% (OECD, 2018), which indicates that a number of graduates are actively seeking, but not finding, suitable jobs. On average, 14.5% of young higher education graduates do not participate in the labour market. This is above the OECD average (10.7%) and places Mexico in a disadvantaged

position, as the skills of these graduates are not used (OECD, 2018^[5]). The unemployment rate of young graduates (5.7%) is similar to the OECD average, but as there are no unemployment benefits, and very few active labour market policies in Mexico, registered unemployment is not common.

Young workers with higher education degrees in Mexico face two major and persistent problems that indicate an inefficient use of skills in the labour market: informality and overqualification. Informal employment increased from 26% in 2010 to 27% in 2017, and employment in occupations that do not require a higher education degree increased from 44% in 2010 to 46% in 2017 (INEGI-ENOE, 2017^[8]).

The wage premium for young higher education graduates in Mexico is the second highest among OECD countries after Chile. Young higher education graduates earn, on average, 78% more than young workers who have completed only upper secondary education (OECD, 2018^[5]). However, graduates who work in occupations for which no higher education qualification is required, or who are employed informally, are less likely to benefit from the wage premium of a higher education degree.

Over half of graduates come from the two most common fields of study: business administration and law (35%), and engineering and construction (21%) (OECD, 2018^[5]). Their employment rates are above average and employers state that these graduates are hired for a wide range of occupations. However, high rates of overqualification, 56% and 53% respectively (INEGI-ENOE, 2017^[8]), suggest that there are not enough graduate-level jobs for graduates in these fields.

Young higher education graduates are becoming more entrepreneurial, even if this is because they cannot find a suitable job (UVM, 2018^[9]). Between 2010 and 2017, the proportion of young graduates who were either self-employed or running a business that employed others increased from 12.7% to 13.8% (INEGI-ENOE, 2017^[8]). The fields of study with the highest rates of entrepreneurs were arts and humanities, agriculture, and engineering (INEGI-ENOE, 2017^[8]).

Although women represent 53.1% of first-time higher education graduates, over one in five do not participate in the labour market. Their inactivity rate is three times higher than that of male graduates (21.3% vs. 6.9%) and their employment rate is lower (74.2% vs. 87.9%) (OECD, 2018^[5]). This can be partially attributed to cultural reasons, but also to business practices that discriminate against women, especially those with young children. In 2016, only 5.2% of Mexican women had a seat on the boards of the largest publicly listed companies (20% OECD average) (OECD, 2017^[2]). Highly skilled women who are not participating to their full capacity in the labour market present a particularly large untapped potential to boost Mexico's economy.

Young graduates do not immediately obtain the same benefits from a higher education qualification as older graduates (35-44 year-olds): they have higher unemployment rates (5.7% vs. 3.0%) (OECD, 2018^[5]) and a higher prevalence of informal employment (27% vs. 24%) (INEGI-ENOE, 2017^[8]). Young graduates from health and well-being programmes, education and natural sciences, and mathematics and statistics are particularly likely to start their professional careers working informally (INEGI-ENOE, 2017^[8]).

In 2017, four industry sectors employed more than three-quarters of young graduates: social and other services (31%); professional, financial and corporate services (18%); trade (15%); and manufacturing (13%). The vast majority worked as paid employees (84%), 11% were self-employed, 4% were employers, while 2% were working without

pay (INEGI-ENOE, 2017^[8]). More than half of young graduates worked for either small (31%) or micro firms (24%), 19% worked in medium-sized enterprises, 16% in large firms and 9% for the government (INEGI-ENOE, 2017^[8]).

There are also major differences in the labour market outcomes of higher education graduates across the different states of Mexico (INEGI-ENOE, 2017^[8]). Graduates in northern states have higher employment rates and are less likely to work in the informal economy or be overqualified than their peers in other parts of the country. Despite these differences, only 5% of young higher education graduates moved either within their state or into another state for their job. This mobility was higher to or within states with high industrial dynamism, such as Baja California Sur (19.0%), and particularly in the fields of education, health, and arts and humanities (INEGI-ENOE, 2017^[8]).

Alignment between skills and labour market needs

While a large young labour force is a great strength of Mexico's labour market, the country still lacks specialised talent, despite recent improvements. Less than a quarter of the young population (25-34 year-olds) have obtained higher education qualifications, and within this limited share of graduates, evidence shows that their skills are not used effectively. The aim to specialise in high-tech industries with large value added is also hindered by the low and decreasing share of graduates in ICT programmes (2% of graduates and new entrants) (OECD, 2018^[5]). This suggests a misalignment between graduates' skills and labour market needs.

According to OECD research, four out of five Mexican employers report difficulties in filling vacancies, particularly 84% of large companies, but also 70% of micro-companies. The mining and extraction, construction, communication, transport, and services sectors have the most difficulties finding workers, while agriculture and fishing, trade and manufacturing have fewer problems (OECD, forthcoming^[10]). Employers cited a lack of experience (24%), high salary expectations (20%), a lack of technical skills (14%) and a lack of professional skills (8%) in candidates as challenges to hiring (Manpower Group, 2017^[11]).

Overall, 46% of Mexican employers stated that there is a lack of skills in their sector, and most (83%) consider the education and training of applicants unsuited to their sector (Hays, 2018^[12]). Employers claimed that some graduates have insufficient discipline-specific knowledge, which is also indicated by the EGEL exams (*Exámenes Generales para el Egreso de Licenciatura*) and recognised by graduates themselves. Employers also raised the issue of the lack of connection between the knowledge and skills developed in higher education programmes and their labour needs, asking for more involvement in the curriculum design and delivery of study programmes. Academic staff recognised that curricula are not changed often enough to adapt to the needs of a rapidly changing labour market.

Representative data on the skills of higher education graduates is not available. The EGEL tests, taken by 1.38 million students between 2005 and 2016 at the end of their bachelor's degree, show that over half of students did not obtain the minimum grade to pass the tests, and only 8% achieved an outstanding result. A 2014 survey by the Research Centre for Development (*Centro de Investigación para el Desarrollo, CIDAC*) found that higher education graduates lacked skills related to written communication in Spanish and oral communication in Spanish and English. Furthermore, employers

reported that graduates had limited ability in synthesising information and logical thinking, and did not show a sense of responsibility or proactivity (CIDAC, 2014_[13]).

Aligning higher education with the changing needs of the labour market

Raising awareness of the labour market relevance and outcomes of higher education

Rationale

Higher education contributes to inclusive growth by strengthening human capital formation, R&D, and innovation. One of the main objectives of higher education is to provide its graduates with the skills needed to succeed in the labour market. This is especially important in today's innovation-driven, skills-based, globalised economies, and corresponds well with the student expectation of finding adequate employment upon conclusion of their studies.

A comprehensive and coherent vision for the future of higher education that highlights the importance of its labour market relevance can guide future policy development over the medium and long term, in harmony with national social and economic objectives. A strategy for improved labour market relevance and outcomes of higher education helps raise awareness of the issue and provides guidance to higher education institutions, students, social partners (employers and trade unions) and other stakeholders on what the government wants to do and how. It provides a cohesive framework for policy initiatives and for monitoring and evaluating those initiatives, and ensures effective co-ordination across levels of government, agencies and other stakeholders.

A strategy also ensures consensus building among stakeholders. Effective communication is important so that all relevant parties see the role they should play within the broader policy framework. Without this vision, the strategic direction of medium and long term policies will become the accumulation of short term decisions of different system actors, mainly based on the daily demands of their environment and the interests of institutions, public administration and other groups.

Key issues in Mexico

Mexico lacks a strategic vision for higher education, and there are currently no effective steering mechanisms for the higher education system in terms of quality and the diversity of programmes and levels on offer. There is no strategic approach to enhance the labour market relevance of higher education; with students, higher education institutions and employers largely unaware of the importance of this topic.

Mexico has no common legal framework that comprehensively regulates the higher education system. The Higher Education Co-ordination Act 1978 (*Ley de Coordinación de la Educación Superior*) provides basic guidelines for co-ordination between the federal and state governments in higher education, but responsibilities regarding higher education institutions and procedures for co-ordinating their activities are not outlined with any precision. The intersecretarial National Productivity Committee (*Comité Nacional de Productividad*, CNP) recently developed a skills framework for Mexico (*Sistema de Formación de Habilidades*), informed by the OECD's Skills Strategy of Mexico in 2017. The CNP's skills framework covers all levels of education and the skill needs of the strategic industries. However, the sectoral programmes of the federal ministries of

education, employment and economy are designed independently, which risks fragmentation.

Box 1.1. Policy recommendations: Raising awareness of the importance of the labour market relevance and outcomes of higher education

1. Develop a national strategy on the labour market relevance and outcomes of higher education

- Develop a national strategy to enhance the labour market relevance and outcomes of higher education that is anchored in a new legislative act for higher education, as recommended by the OECD's broader review for higher education (OECD, 2019^[14]). The strategy should aim to:
 - Raise awareness of the importance of enhancing the labour market relevance and outcomes of Mexico's higher education system.
 - Provide a framework for a suite of policy initiatives to ensure a cohesive and systemic approach is taken to enhance the labour market relevance and outcomes of higher education.
 - Ensure effective co-ordination across levels of government, agencies and other organisations in delivering policy initiatives.
 - Ensure effective collaboration between government, higher education institutions, students and social partners in developing and implementing policy initiatives.
 - Provide a mechanism to monitor and evaluate the effectiveness of policy initiatives.
- Ensure the strategy is supported by funding and undertaken in collaboration with federal and state ministries and stakeholders (including higher education institutions, students, and social partners).

There are several initiatives to enhance the labour market relevance of higher education undertaken by the SEP (e.g. the Strengthening Education Quality Programme, *Programa de Fortalecimiento de la Calidad Educativa*, PCFE), the National Science and Technology Council (*Consejo Nacional de Ciencia y Tecnología*, CONACyT) (e.g. postgraduate programmes with industry), and the Secretariat of Economy (e.g. industrial clusters and the incubator programme). During 2013-2015, Parliament established the Special Commission on Strengthening Higher Education and Training to Promote Development and Competitiveness (*Comisión Especial de Fortalecimiento a la Educación Superior y la Capacitación para Impulsar el Desarrollo y la Competitividad*, CEFESDC). Higher education institutions also have their own initiatives. However, all of these initiatives are disjointed and lack a cohesive framework. In addition, there are no effective mechanisms in place to monitor and evaluate the effectiveness of policies and practices in higher education to enhance labour market relevance and outcomes.

Strengthening the quality of higher education

Rationale

A high-quality higher education system is vital in ensuring that qualified graduates are capable of contributing effectively to economic development and to society at large. High-quality systems can help students develop strong knowledge and skills relevant to the labour market and go on to achieve good employment outcomes.

There is no established definition or measure of quality in higher education, however, the factors considered when discussing and assessing quality in higher education encompass the student experience and learning outcomes, the acquisition of discipline-specific and transversal skills through higher education, labour market outcomes, pathways into and within the system, equity, and the governance and management of the higher education system (Hazelkorn, Coates and McCormick, 2018^[15]).

Strengthening the quality of lower levels of education is central to ensuring that students are equipped with the necessary skills to succeed in higher education. The preparedness of secondary school graduates for higher education is a key factor in determining their study success and first-year attrition (Lowe and Cook, 2003^[16]).

Quality assurance mechanisms are used to assess the factors linked to quality and provide students, parents, academic staff, institutional leadership, and employers with the confidence that higher education institutions are of sufficient quality and, in the context of this project, that the knowledge and skills developed in higher education are relevant for current and future labour markets. Mass participation, increasingly flexible types of provision, and the emergence of new higher education institutions – particularly private – put additional pressure on the mechanisms in place to ensure the quality of higher education (OECD, 2008^[17]).

There are three main approaches to quality assurance in higher education: audit (review), assessment (evaluation) and accreditation (OECD, 2008^[17]). These external quality assurance processes involve experts and peers who evaluate the quality of institutions and programmes to ensure they meet specified standards. They may also provide recommendations for continuous improvement. These processes can be conducted by institutional associations, government departments or independent agencies.

The overall aim of external quality assurance processes is that higher education institutions put internal quality assurance mechanisms in place and engage in internal quality evaluations. Adherence to these internal quality assurance standards can help higher education institutions develop a strong quality culture, and thereby help build trust and confidence in higher education.

Key issues in Mexico

The quality and relevance of higher education is a key objective in the Sectoral Education Programme 2013-2018 (*Programa Sectorial de Educación 2013-2018*) and is also supported by several targeted funding programmes, such as the Strengthening Education Quality Programme (*Programa de Fortalecimiento de la Calidad Educativa*, PFCE). While some higher education institutions are considered to be of high quality, there are large differences within subsystems and institutions, and the quality of private higher education institutions is of particular concern. This has been exacerbated by the large increase in institutions, programmes and students over recent years. At the same time,

there is not a strong culture of internal quality assurance across the higher education system, although there have been improvements in this area.

There are no adequate mechanisms in place to assure the quality of higher education. The quality assurance system is complex, fragmented and lacks transparency. It has multiple layers that were introduced at different times, and the system as a whole now lacks coherence. This is exacerbated by the existence of multiple quality assurance agencies that address different levels of higher education, have overlapping functions, apply different criteria and use different mechanisms. To address this situation, the SEP reactivated the Commission for the Co-ordination of the Higher Education Evaluation Agencies (*Comisión Coordinadora de Organismos de Evaluación de la Educación Superior*, COCOEES) in mid-2017, but it is too early to assess its effectiveness.

Institutional accreditation is not used to control entry to, or continue operations in, the Mexican higher education system. Public higher education institutions are not required to undergo any form of institutional accreditation. Private higher education institutions, which enrol around one-third of students, have no barriers to enter the higher education system. On a voluntary basis, 84 of the 2 693 private institutions have sought institutional accreditation through the Federation of Mexican Private Higher Education Institutions (*Federación de Instituciones Mexicanas Particulares de Educación Superior*, FIMPES), the main association for private higher education institutions. This is intended to be a mark of quality to signal that higher education institutions meet certain educational standards.

Programme evaluation and accreditation is also voluntary for all institutions, meaning that they can deliver programmes that have not gone through any form of external quality assurance. Programme accreditation is undertaken by three separate organisations: undergraduate programme evaluation is conducted by the Inter-institutional Committees for Higher Education Assessment (*Comités Interinstitucionales para la Evaluación de la Educación Superior*, CIEES); programme accreditation is conducted by the Council for the Accreditation of Higher Education (*Consejo para la Acreditación de la Educación Superior*, COPAES) agencies; and CONACyT accredits postgraduate programmes.

Similar to institutional accreditation, the quality assurance of programmes is variable and not widespread. Under half (43.1%) of undergraduates are enrolled in the 17.3% of programmes that have either been evaluated by CIEES as level one programmes or accredited by COPAES agencies. Most of these “quality” programmes are offered by public institutions. Furthermore, only 21.5% (2 297 out of 10 645) of postgraduate programmes have been accredited by CONACyT, almost two-thirds of them in federal or state public universities.

Programmes delivered by public higher education institutions are implicitly recognised as part of the national higher education system. Private institutions that would like to have their programmes recognised as part of the national education system can seek the Recognition of Official Validation of Studies (*Reconocimiento de Validez Oficial de Estudios*, RVOE). Only students from programmes with a RVOE, or those from public higher education institutions, are granted a professional licence (*cédula profesional*), which is required to operate in over 30 regulated professions.

The RVOE is issued by the ministries of education at the federal and state levels and assesses that programmes fulfil basic requirements concerning academic staff, campus facilities and curriculum. A RVOE is awarded indefinitely, although it can be removed in

case of non-compliance. Requisites have increased in this renewed agreement, but it still does not guarantee minimum quality standards.

The Mexican National Qualifications Framework could help assess, develop and enhance quality, but it is largely unknown among higher education stakeholders and not used to align programmes or in accreditation. The framework was released in 2014, covers all levels of education and is currently reviewed by the SEP.

The rapid growth of higher education may pose a risk to the quality of provision. Therefore, the further expansion of higher education should be undertaken through a sequence of steps, with a focus on raising quality before or at the same time as the expansion of supply. The OECD's 2018 review of higher education addresses the issue of quality more generally (OECD, 2019_[14]). Addressing the quality of higher education in Mexico is a vital first step towards improving the labour market relevance and outcomes of the system, and will help ensure that students develop strong skills that will equip them for the future.

Box 1.2. Policy recommendations: Strengthening the quality of higher education

2. Strengthen the quality assurance system to help ensure that students develop labour market relevant knowledge and skills

- In line with the OECD's broader review of higher education (OECD, 2019_[14]), take steps to improve the quality of higher education through strengthened institutional and programme accreditation.
- Ensure that programme accreditation takes account of the National Qualification Framework.

Integrating labour market relevance into quality assurance mechanisms

Rationale

Quality assurance mechanisms, such as establishment laws, institutional accreditation, programme feasibility studies and programme accreditation, can be effective in ensuring that higher education institutions consider labour market relevance in their programme offer and engage with social partners. Engagement with social partners at both institutional and programme levels is a common practice across many OECD countries to enhance the labour market relevance and outcomes of higher education. Policy makers can use accreditation procedures by including labour market relevant criteria or minimum standards for institutions to help ensure the quality and relevance of skills developed.

Accreditation criteria can also guarantee that institutions have processes in place to ensure the involvement of social partners in decisions about which programmes to offer or in the design and delivery of study programmes. They may also focus on outputs such as minimum levels of professional or transversal skills, or on labour market outcomes, such as employment and earnings, to encourage higher education institutions to focus on graduate outcomes. To increase labour market responsiveness, the accreditation process needs to be sufficiently flexible to allow the use of different approaches to help students develop labour market relevant skills.

Integrating criteria to ensure that higher education institutions engage with social partners in accreditation processes helps improve the quality of the higher education system. This sends a strong signal to students and employers that accredited institutions and programmes help students develop labour market relevant skills, which should position them well for success in the labour market.

Key issues in Mexico

The legislative framework of the three technological subsystems requires a series of practices that can enhance labour market relevance and outcomes, such as including engagement with employers in governance or curriculum updates, and feasibility studies that include labour market data and employers' views to justify the creation of a new programme. Institutions need to report on all of these practices to their co-ordinating agency within the SEP.

Public autonomous institutions are established under federal or state law. For most of these institutions, there are no requirements to involve social partners in decision making at the institutional governance, faculty or programme level, or in programme design and delivery.

While the institutional accreditation of private universities carried out by FIMPES does not include any aspect of labour market relevance as a criteria; COPAES and CIEES consider it in their undergraduate programme evaluation and accreditation. However, stakeholders reported that the application of this criteria is flawed as there are not sufficiently detailed guidelines for the accreditation/evaluation process, and there is a lack of transparency on how the criteria is applied. The application of criteria does not seem to be consistent among agencies, and reporting requirements do not seem to be strict. The voluntary nature of the accreditation further reduces the impact of this criteria.

Box 1.3. Policy recommendations: Integrating labour market relevance into quality assurance mechanisms

3. Ensure that quality assurance mechanisms include criteria on labour market relevance and engagement with social partners

- Include labour market relevance and engagement with social partners as criteria in programme accreditation processes.
- Encourage private higher education institutions to include this criteria in the voluntary institutional accreditation undertaken by FIMPES.

CONACyT establishes the criteria to recognise postgraduate programmes as part of the National Programme of Quality Postgraduate Studies (*Programa Nacional de Posgrados de Calidad*, PNPC) in three categories: research, professional or industrial programmes. Research programmes have very few criteria related to labour market relevance outcomes, there are more for professional programmes, and programmes with industry must, by definition, be designed and delivered in close collaboration with companies.

Helping higher education institutions engage more effectively with employers

Rationale

Effective partnerships between higher education institutions and employers are beneficial for all parties. Students have a quicker transition to the labour market and achieve better outcomes, while employers get the skilled labour force they need. Academic staff keep up with current workforce practices and skills needs and build strategic relationships with employers, which are relevant for teaching and research activities. Temporary staff mobility from higher education to industry and vice versa is an effective practice for engagement (Wilson, 2012_[18]).

Higher education engagement with employers may take a number of forms to ensure that the content of programmes is labour market relevant and that students develop the skills employers seek. The involvement of employers in the governing and advisory bodies of higher education institutions is widely practiced in some higher education systems. Employers benefit from the opportunity to work directly with academic staff in the design and development of the curriculum, and can contribute directly to learning and teaching or make specialised industry equipment available. They can also play an important role through the provision of work-based learning in their own facilities. Employers provide labour market intelligence and can support programme accreditation.

Engagement between higher education institutions and employers can be time-consuming and frustrating for both parties if not well planned and organised. For example, it can be difficult for employers to identify academic staff and programmes with which they could effectively engage. It can also be difficult for academic staff to establish contacts and networks with social partners. Centralised structures that connect students, academic staff and higher education institutions with employers can help overcome these barriers.

Key issues in Mexico

Mexican higher education institutions are not sufficiently flexible and well-connected to adapt their education and research activities to the current and emerging needs of the Mexican economy (Badillo-Vega et al., 2015_[19]). At the same time, the characteristics of the economy and labour market (large informal sector, large share of SMEs, low innovation, etc.) make engagement with employers difficult.

Employer representation in the governing bodies of higher education institutions (e.g. employers as members of an executive council) is not widespread, except for the technological subsystems, where it is compulsory. Although the establishment laws of public higher education institutions require the participation of social partners in advisory bodies, social partners are not required to be involved in the design and delivery of study programmes.

There is no tradition of interaction between academic staff and employers in Mexico, and there are few avenues for institutions to engage with employers, particularly SMEs. The regulation of public higher education institutions allows tenured full-time academic staff, after six years of service, to take a sabbatical for up to one year. They can undertake postgraduate studies, research or training, develop a business project or work in a company. However, 71% of academic staff across all subsystems are casual staff (*profesor de asignatura*) and cannot benefit from this arrangement.

Some higher education institutions have established engagement offices to help facilitate engagement with local businesses. Nonetheless, stakeholders reported that engagement

offices are understaffed, underfunded and staff often do not have experience or training in engagement activities. There is not a specific funding programme for these offices, but funding programmes such as the Programme to Support Higher Education (*Programa de Apoyo al Desarrollo de la Educación Superior*, PADES) can be used to establish engagement offices or fund related activities. In addition, CONACyT provided some funding through the GeT-In programme to train staff in engagement offices over 2013-2016, but the programme had limited coverage.

Box 1.4. Policy recommendations: Helping higher education institutions engage more effectively with social partners

4. Encourage greater co-operation between higher education institutions and social partners in programme planning, design and delivery

- Support the establishment of institution-based advisory committees that foster co-operation between public higher education institutions and social partners and provide advice and support in the planning, design and delivery of programmes. The advisory committees could function at the institutional level (to help ensure the delivery of programmes that meet labour market needs) and the operational level (to help in the design and delivery of programmes to ensure the curriculum is relevant to the labour market).

5. Strengthen the role of engagement offices to foster greater collaboration between higher education institutions and social partners

- Evaluate the effectiveness of existing engagement offices to determine how well these offices are functioning, to identify best practices, and to ascertain whether these offices could be extended more broadly across the higher education system. Share lessons learnt across all subsystems.
- Introduce targeted funding to pilot the establishment of engagement offices in a broader range of public higher education institutions across subsystems, and support the training of staff working in engagement offices.
- Encourage higher education institutions to better connect their engagement offices with other institutional units (e.g. technology transfer offices, internship offices, incubators) and co-ordinate various engagement activities, including participation in science and technology parks, as well as industrial clusters.
- Support the creation of a network of engagement offices and collaboration opportunities for staff working in these offices.

Some science and technology parks, as well as industrial clusters, partner with higher education institutions or include them as members, which enables research collaboration. These initiatives can also be very effective in facilitating collaboration in education activities. Proximity facilitates shared facilities and staff mobility between higher education institutions and industry. Currently, the involvement of higher education institutions in science and technology parks, as well as industrial clusters, is limited.

Ensuring a diverse offer of programmes

Rationale

The effective development and use of skills is central to economic and social development, particularly in a context of rapidly changing labour market needs. Higher education plays an important role in this through the development of advanced skills and new knowledge, which are both at the core of innovation.

Employers require a broad range of knowledge and skills. An adequate supply and mix of good technical, professional and discipline-specific knowledge developed in higher education is important for economic growth. An oversupply of skills for which there is insufficient demand in the labour market could result in skills mismatch and skills atrophy, which is likely to negatively impact technical and professional skills (Handel, 2012_[20]), as well as inactivity or migration.

Ideally, higher education systems ensure a diverse offer of programmes with a broad range of fields and levels of study that provide a good match with current labour market needs and shape future labour markets by enabling or encouraging certain kinds of economic activity.

Key issues in Mexico

Currently, over a third of bachelor's graduates (35%) in Mexico are from law and business administration programmes (OECD, 2018_[5]), 55% of whom were overqualified for their jobs (44% average across all fields of study) (INEGI-ENOE, 2017_[8]). Continuously high enrolment in these programmes reflects to some extent student choice, although students have limited labour market information available to make informed choices about which programmes to choose. This high enrolment is exacerbated by institutional responses to funding.

The federal government provides a block grant to public higher education institutions that is simply based on staff and student numbers, historical trends and negotiations with individual institutions. In the absence of mechanisms that provide differentiated levels of funding for different fields and levels of study, higher education institutions in Mexico tend to deliver programmes that are likely to attract high enrolments and that are less costly in terms of staff and infrastructure. As a result, close to half (46.6%) of higher education programmes are offered in social sciences, administration and law, and 71.9% are offered at the bachelor level (ISCED 6 level) (ANUIES, 2018_[21]).

Representatives of large Mexican companies advised the OECD review team that they would like to recruit more graduates of short-cycle higher education programmes (*técnico superior universitario* and *profesional asociado*). These programmes are mainly offered within the technological subsystems in technical fields of studies, and increasingly in business administration. Although the share of first-time graduates from short-cycle tertiary education programmes has increased from 6.7% in 2005 to 8.1% in 2016 (OECD, 2018_[5]), prospective students in Mexico, and their families, generally consider these programmes less prestigious than bachelor's programmes. Student demand is low and many higher education institutions are not interested in offering these programmes.

Labour market outcomes of short-cycle tertiary education programmes are poorer than for bachelor's programmes. Young graduates from a short-cycle programme can expect a wage premium of 19% compared to upper secondary degree holders, whereas the wage premium for a bachelor's degree is 80% (OECD, 2017_[7]). They are also more

overqualified, as bachelor's graduates often take jobs that only require short-cycle programme qualifications or lower. This has a cascading effect, with short-cycle programme graduates taking jobs for which only upper secondary education is required (INEGI-ENOE, 2017_[8]).

The current innovation capacity is very limited. There are only 0.7 R&D personnel per 1 000 employees in Mexico, compared to 7.7 in OECD countries, 25% of whom work in business (61% OECD average) (OECD, 2017_[22]). Mexico needs to train master's and doctorate students to increase R&D activities and drive innovation in the private sector, particularly in its strategic industries (e.g. energy, automobile and aerospace). However, there is limited capacity within the labour market to absorb the current number of graduates at this level, so efforts will also be required from the labour market side.

Box 1.5. Policy recommendations: Ensuring a diverse offer of programmes

6. Encourage the offer of a more diverse range of programmes in different fields of study and at different levels

- Raise awareness among students and higher education institutions of the importance of short-cycle tertiary education programmes (ISCED 5) and make these programmes more attractive through initiatives that demonstrate how graduates from such programmes can succeed in the labour market.
- Introduce a new allocative mechanism for block grants for education using funding formulas and weightings to steer the delivery of programmes that are better aligned with the labour market.
- Provide grants and scholarships to students to encourage them to enrol in programmes that are aligned with labour market needs.

7. Support the delivery of interdisciplinary programmes

- Remove barriers to the accreditation of interdisciplinary programmes and professional licenses for graduates of these programmes.

In 2016-17, around 6% of students were enrolled in master's programmes and 1% in doctoral programmes (SEP, 2017_[6]). Postgraduate enrolment is concentrated in business administration and law (37.8%), with only 8.1% in engineering programmes and 4.5% in natural sciences, mathematics and statistics (OECD, 2018_[5]). The majority of postgraduate programmes are delivered by private higher education institutions, with limited provision in public institutions. The high fees for the programmes in private higher education institutions could discourage qualified candidates from pursuing postgraduate studies. CONACyT offers scholarships for students in postgraduate programmes of recognised quality (PNPC), but these are limited in number (around 22 000), and around two-thirds are in science, technology, engineering and mathematics (STEM) fields.

Emerging labour market needs also require interdisciplinary programmes, but these are very difficult to accredit under current arrangements. Despite recent efforts towards flexibility and interdisciplinarity, accreditation agencies are discipline specific. Therefore, institutions must seek accreditation for these programmes from multiple agencies, which increases the regulatory burden and delivery costs. In addition, the higher education system and the labour market rely heavily on occupations and related professional

licenses, and train students for specific jobs. Professional licenses are essential for some occupations, such as medical professions, doctors and engineers. However, there are currently no professional licenses to recognise the mix of two or more disciplines.

Helping students succeed in higher education and the labour market

Fostering innovative learning and teaching practices in higher education

Rationale

High-quality learning and teaching helps students improve the way they learn and retain key knowledge and skills developed in higher education, which facilitates success in the labour market. Innovative approaches to learning and teaching, which require students to apply knowledge to unknown contexts and develop high-quality skills (e.g. via group activities, oral presentations, and problem-solving scenarios), can enhance discipline-specific knowledge and skills, support the development of transversal skills, and demonstrate how to apply them in a work environment.

Entrepreneurship education in particular uses innovative approaches to learning and teaching. If integrated into the curriculum, it can reach all students and facilitate the development of a wide range of transversal skills alongside business creation knowledge and skills.

Academic staff are typically experts in their field, but they may only have received rudimentary instruction in how to effectively support student learning and connect academic knowledge with practice. As a result, institutions offer their academic staff professional development and training to improve the quality of learning and teaching (OECD, 2012_[23]). Moreover, several incentive structures for the hire, retention and promotion of academic staff now recognise and reward the quality of teaching, in addition to the quality of research.

The skills of academic staff also influence the quality of teaching. Academic staff without postgraduate qualifications have lower levels of expertise in their discipline area, which can affect the quality and depth of teaching provided (Altbach, 2011_[24]).

An increasing number of higher education institutions are hiring successful and experienced business people (e.g. professors of practice) as tenured staff. They are expected to interact with academic staff at a highly applied level and to enrich teaching and research activities with practice-based knowledge and research questions.

Undertaking part of a higher education programme in another country can also help students develop important knowledge (e.g. of other societies, languages, cultures and business methods) and transversal skills (e.g. cross-cultural sensitivities) (OECD, 2013_[25]), which support good labour market outcomes. However, barriers to this often include financing, concern about delaying the completion of their studies, insufficient language skills, home ties and lack of interest (Beerens et al., 2016_[26]).

Key issues in Mexico

The rapid expansion of the Mexican higher education system has increased the number of students per course, which may be a barrier to the application of innovative teaching methods. Many academics have only had exposure to traditional teaching practices and are either reluctant to try or unaware of different teaching approaches. As a result, higher education institutions rely heavily on lecture-based teaching. There is limited use of

experiential learning, project-based learning or other innovative practices in the classroom that can help students develop discipline-specific knowledge and high-quality skills, including transversal skills. Entrepreneurship education is not widespread in higher education and, when offered, is not an integral part of the curriculum.

Competency-based education has been introduced as a new model of learning and teaching in the technological subsystems, but academic staff have indicated that they have not received sufficient support to implement this model and it is not widely or effectively practiced (Lozano Rosales, Castillo Santos and Cerecedo Mercado, 2012^[27]).

There are very few initiatives to develop transversal skills through higher education. The importance of transversal skills for academic achievement is not widely recognised across the subsystems and its development is not an integral part of study programmes. Students are largely unaware of the importance of transversal skills or of how to develop transversal skills through higher education. As in many countries, academic staff see their primary teaching role as helping students develop discipline-specific knowledge and skills, but not transversal skills. Academic staff also reported that they do not have information about what type of skills are relevant for the labour market or an understanding of how they could support students in developing these skills. In meetings with the OECD review team, employers highly valued transversal skills, but stated that higher education is not developing these skills.

Good learning and teaching practices are not recognised and rewarded in higher education. There are no incentives and little support for academic staff to get labour market information, improve their teaching performance or integrate labour market relevance into their courses. While some large private higher education institutions offer training and professional development in teaching, this practice is not widespread across the subsystems. In public institutions, the Programme for the Professional Development of Academic Staff in Higher Education (*Programa para el Desarrollo Profesional Docente, para el Tipo Superior*, PRODEP) supports projects to improve the quality of teaching, but it is focused on increasing attainment levels in academic staff.

At an individual level, academic staff in public and private higher education institutions who are members of the National System of Researchers (*Sistema Nacional de Investigadores*, SNI) are recognised for their performance in three areas: the quality of their research, the commercialisation of research results, and their contribution to education. The contribution to education is measured by the overall amount of teaching hours but not the quality of teaching, which calls for more quality indicators for teaching.

The use of casual academic staff whose primary job is in a discipline-related occupation can enhance project-based, problem-based, and experiential learning by bringing real-world experience to higher education. However, casual staff often work in areas largely unrelated to the courses taught. Moreover, they are not fully integrated into faculties or programmes and rarely benefit from training and professional development, even though some casual staff teach up to 40 hours a week.

The role of professor of practice does not exist in Mexican higher education institutions, despite the potential advantages that experienced industry professionals could bring to innovative learning and teaching and the labour market relevance of higher education.

The qualification levels of academic staff in Mexico are relatively low compared to other countries, although this varies between subsystems and institutions. Progress has been made to increase the qualification levels of academic staff (Guzmán-Acuña and Martínez-Arcos, 2015^[28]), with over 20 000 academic staff members receiving a doctoral degree

from 2010 to 2017. However, doctoral degree holders still represent only 12.6% of all academic staff, almost half (47.8%) hold a bachelor's degree, 38.6% a master's or specialisation degree, and 1.1% a short-cycle programme. By contrast, more than 90% of tenured academic staff hold a doctoral degree in Germany, Austria, Poland, Portugal, Finland and Switzerland, and between 60% and 80% in Croatia, Ireland, the Netherlands, the United Kingdom and Norway (European Commission/EACEA/Eurydice, 2017^[29]).

In 2016, international students accounted for less than 0.5% of all students in Mexico, and less than 1% of Mexican students studied abroad (OECD, 2018^[5]). This limited incoming and outgoing mobility reduces students' exposure to other cultures, hindering the development of important skills that employers seek, particularly in international trade and global value chains. There are limited opportunities for international mobility, and those that exist focus on STEM fields, meaning that students in other fields have fewer opportunities to study abroad. Stakeholders reported to the OECD review team that a wider take up of these scholarships is hindered by a lack of awareness among students and insufficient funding to cover all costs associated with studying abroad. The costs in particular can limit mobility to students who can afford a period studying abroad.

Internationalisation of the curriculum is uncommon, which further limits opportunities to develop related transversal skills (e.g. language and intercultural communication) for students who cannot afford to study abroad. The majority of programmes are not internationally oriented, and only very few institutions offer programmes taught in English.

The federal government does not have an international education strategy for higher education, or a dedicated agency that promotes or facilitates international education, unlike many other OECD countries. There are a number of bilateral and multilateral government agreements that facilitate institutional level partnerships and participation in international programmes, such as the Erasmus+ programme. However, the internationalisation activities of higher education institutions are largely based on institutional level agreements with partner institutions abroad. Furthermore, internationalisation in higher education is disconnected from other internationalisation initiatives that aim to strengthen the country's position in global value chains.

Box 1.6. Policy recommendations: Fostering innovative learning and teaching practices in higher education

8. Develop a strong culture of excellence in learning and teaching.

- Support higher education associations and institutions in providing teacher training and ongoing professional development to all academic staff on innovative learning and teaching, as well as transversal skills development, including skills for entrepreneurship.
- Support the development and delivery of an online course on pedagogy and innovative teaching methods for all academic staff to complement training offered by higher education institutions and their associations in preparation for certification of teaching skills.
- Develop common indicators to monitor and assess good quality learning and teaching practices, and include these indicators in the SNI in conjunction with relevant agencies and higher education associations.

- Establish a national teaching excellence award programme to raise awareness of the importance of good teaching that helps students develop labour market relevant skills.
- Support higher education associations and institutions in undertaking research on effective learning and teaching practices, including the evaluation of current practices in Mexico.
- Collect and disseminate good learning and teaching practices nationally and internationally to build a body of knowledge that academic staff can draw on and apply in their practice.
- Establish a national Centre for Excellence in Learning and Teaching to be responsible for these actions, with outreach across all subsystems and states.

9. Strengthen the qualifications of academic staff

- Support increased qualifications among academic staff.

10. Encourage the adoption of professors of practice

- Encourage higher education institutions, particularly those in the technological subsystems, to integrate experienced industry professionals into their teaching staff by awarding the title of “professors of practice”.

11. Promote the internationalisation of the curriculum and support student and staff mobility

- Develop a strategy to improve and promote internationalisation in higher education.
- Support academic staff to increase the internationalisation of curriculum. This could also be part of the activities of the proposed Centre for Excellence in Learning and Teaching.
- Support increased inward and outward mobility of student and staff through targeted funding and scholarships.

Integrating work-based learning into the curriculum

Rationale

Work-based learning can help students achieve better labour market outcomes and complement learning that takes place primarily in the classroom or laboratory, which is typically more applied. Work-based learning can take many forms, such as field experience, mandatory professional practice, co-operative education placements, internships, dual education programmes, applied research, project learning and service learning. Through these practices, students can develop work-relevant technical and professional skills, as well as transversal skills.

Work-based learning provides opportunities for employers to assess the capacities of students as potential future employees, which can reduce recruitment costs. However, employers need to allocate resources to select, train, and supervise students during their work experience, which limits participation in work-based learning, particularly for smaller firms.

It is important to embed work-based learning in programmes so that all students have equitable access, not just students from family backgrounds where personal relationships and networks provide them with greater opportunities to gain work experience while studying (Cahill, 2016_[30]). Good guidance on work-based learning, including preparing and supporting students, academic staff and employers, can also help increase the quality of internships and other forms of work-based learning. This guidance and support is often provided by centralised units in higher education institutions (e.g. career offices).

Key issues in Mexico

The lack of professional experience is one of the most cited reasons for Mexican employers rejecting young higher education graduates. Work-based learning is offered in Mexican higher education in various forms during and at the end of study programmes, but the extent and relevance varies across the subsystems. Work-based learning also varies by field of study: it is common in engineering and health programmes, but less so in humanities and social sciences. The National Association of Universities and Higher Education Institutions (*Asociación Nacional de Universidades e Instituciones de Enseñanza Superior*, ANUIES) estimates that internships are compulsory in 55% of higher education institutions (ANUIES, 2017_[31]).

The organisation of high-quality internships is likely to be challenging and resource intensive for many higher education institutions given the overall economic context in the country and major regional differences. Some higher education institutions provide support to help students secure internships, but it is often the responsibility of the students themselves to find an internship. This can disadvantage students whose families do not have a social network with ties to the business community. Students reportedly have difficulties finding internships, and their quality raises concerns. However, there has not been extensive evaluation or research done on the issue in Mexico.

Some higher education institutions, particularly large ones, have career offices (*oficinas de prácticas*) that co-ordinate student participation in internships and other forms of work-based learning, such as social service. These offices are often understaffed and not well connected enough to provide comprehensive preparation and career guidance for students to facilitate transition to the labour market.

To address this problem, ANUIES sought federal funding to establish the Higher Education-Industry Foundation (*Fundación Educación Superior-Empresa*, FESE), which was created in 2008. The SEP provided funding to FESE to operate as a central platform to connect students with employers for internships. FESE developed guidelines to facilitate the organisation of internships and increase their relevance for students. It also introduced a standard contract and insurance policy for internships, thus overcoming a gap in the Mexican labour legislation. Stakeholders advised the OECD review team that FESE was very effective, particularly for smaller higher education institutions that lack internal resources. The public funding for FESE ceased in 2014. Currently, there is no central platform to connect students with employers for internships.

Bachelor and short-cycle students must complete a social service to obtain their qualification and professional licence. Social service is a period of 480 hours intended to allow students to give back to society by working in non-governmental organisations, public education institutions, or government. Companies with a corporate social responsibility programme can also host students for their social service.

Students are expected to apply the discipline-specific knowledge and skills they have developed through higher education in their social service. This can help students develop a broad range of transversal skills. However, stakeholders have reported that the social service is not sufficiently connected with study programmes or labour market relevant skills, and that there are no mechanisms in place to ensure that students complete a suitable social service. As a result, many students do not see the benefit of completing a social service. The co-ordination of student participation in social service is usually organised by a dedicated office (*oficinas de prácticas y servicio social*) in higher education institutions, but organisational capacity issues have been identified as a common barrier to effective management.

Students receive a certificate upon completion of the social service. However, the work undertaken is not evaluated in terms of learning outcomes and transversal skills development. There is no formal procedure in place for students to give feedback to their higher education institution about the social service and the organisation they worked in, including its relevance and the types of skills they developed and applied. This is a missed opportunity that could help improve the curriculum and ensure its relevance to the labour market. The technological subsystems are an exception as they assess the social service, but the potential disconnection from study programmes remains a problem.

Legislation concerning the social service is unclear, fragmented and contradictory. A wide range of legal documents regulate social service, from the Mexican Constitution to individual higher education institutions. This piecemeal approach and lack of clear and coherent guidance creates confusion and tensions in higher education institutions, and in their relationship with state and federal governments.

Dual education programmes, where students are employed in a firm full-time while also enrolled in an undergraduate programme, have recently been introduced in some Mexican higher education institutions. This initiative, started by German companies working in the automobile industry, has expanded to large companies in other sectors (e.g. aerospace, electronics). The SEP developed a dual education model for the technological subsystems that is currently under review. However, there is still little awareness of dual education programmes or their benefits among higher education institutions, students and companies. The scarcity of resources, and the lack of long-term planning dominant in Mexican companies, hinders the commitment of resources to supervise and support students throughout the programme.

CONACyT provides financial support for students enrolled in the 38 postgraduate programmes with industry (*programa de posgrados con industria*) developed to help meet the innovation and R&D needs of companies. Students spend their time in both the company and their higher education institution and undertake research around concrete industrial problems. A joint application from both the student and the company is required. Despite the alignment of these higher education programmes with labour market needs, demand for these programmes has been low. From 2013-2017, 1 481 students were enrolled, 409 of whom already worked in the company when they enrolled in the programme.

Box 1.7. Policy recommendations: Integrating work-based learning into the curriculum**12. Ensure efficient support for the co-ordination of work-based learning**

- Reactivate the role of FESE as a central platform to attract more employers and co-ordinate student internships across all subsystems and states more effectively and efficiently.
- Support higher education institutions to more effectively co-ordinate work-based learning through their career and engagement offices.
- Support higher education associations and institutions to improve communication with professional associations on work-based learning.

13. Strengthen the role of the social service in developing labour market relevant skills

- Harmonise the current conflicting regulations of the social service and develop, in collaboration with social partners, common guidelines for all disciplines that make the link between discipline-specific skills that students bring with them and the transversal skills that students will gain during social service. This can be done by enacting the provisions of the Education Act of 1993, which were aimed at regulating the conditions of the social service.
- Raise awareness among students, employers and higher education institutions of the benefits of social service for transversal skills development and preparing students in their transition from education to the labour market.
- Support more effective co-ordination of student participation in social service within higher education institutions.

14. Promote the benefits of dual education programmes and postgraduate programmes with industry

- Evaluate the effectiveness of existing dual education programmes and postgraduate programmes with industry in Mexico, and, based on the evaluation, support the development of additional programmes more broadly across the higher education system.

Strengthening entrepreneurship support in higher education***Rationale***

Successful entrepreneurs can create businesses, jobs and drive the economy. A well-developed knowledge or technology-based start-up environment helps build greater participation in global value chains and increase innovation (OECD, 2017^[2]).

Higher education institutions have an important role to play in supporting entrepreneurship. Entrepreneurial activities can help students and graduates develop the transversal skills they need to succeed in the workplace, as well as offer viable career options and pathways into the labour market. This is particularly important in countries where the labour market has a low absorption capacity.

Governments can also help create favourable regional or local ecosystems for entrepreneurship through policy levers that support business creation and growth. Recent initiatives in OECD countries include specific support for companies created within higher education institutions, particularly those based on cutting-edge knowledge and high-technology.

Key issues in Mexico

High-technology entrepreneurship would help move the Mexican economy up in global value chains, and could also help to address social needs. However, Mexico currently has an underdeveloped knowledge-based start-up environment (OECD, 2017^[2]).

Some graduates have difficulty finding jobs that suit their level of qualification. Overqualified graduates in the labour market may not make full use of the knowledge and skills they have acquired in higher education, which can lead to skills atrophy. Starting a business can be a viable career option and help graduates succeed in the labour market.

Higher education can play an important role in supporting high-technology entrepreneurship and developing the knowledge and skills graduates need to become successful entrepreneurs (OECD, 2018^[32]). Higher education in Mexico is currently focused on education for specific professions, and although support for entrepreneurship is increasing, it is not yet widespread practice. Nevertheless, there are some good examples of entrepreneurship support in higher education institutions across many subsystems.

Box 1.8. Policy recommendations: Strengthening entrepreneurship support in higher education

15. Support entrepreneurship in higher education

- Support the development of programmes that integrate entrepreneurship into the curricula to provide all interested students with the opportunity to develop the knowledge and skills they need to start and successfully run a business.
- Support the development of business start-up support in higher education institutions.

16. Improve the connection of higher education institutions with other actors in the entrepreneurship ecosystem

- Support higher education associations and institutions to better connect their entrepreneurship support and their start-ups with INADEM, other public and private funding programmes, science and technology parks, other business support organisations and other companies.

Higher education institutions are not currently well integrated into the emerging start-up ecosystem in Mexico. Incubators within higher education institutions are often not connected internally to other institutional offices that link with companies (technology transfer offices, career offices, engagement offices, etc.). This is inefficient and hinders potential synergies among offices (e.g. common industry contacts, places for internships, funding).

The National Institute for Entrepreneurship (INADEM) plays an important role in building entrepreneurship, and start-up companies created in higher education institutions

can also benefit from their services. To support entrepreneurship through higher education, INADEM funds incubator and accelerator programmes to which higher education institutions can apply. The work of INADEM could be better connected with higher education institutions.

Ensuring better pathways into and across the higher education system

Rationale

Countries need to maximise the talents of all citizens. However, there may be barriers in place preventing capable individuals from entering higher education. From early in their schooling, before they have had a chance to consider an academic trajectory, school students may be channelled into a vocational strand that does not provide a pathway to higher education. Others may not succeed in secondary education, making it difficult to pursue further education. Older adults who have not completed upper secondary education may have gained valuable knowledge and practical experience that would position them well for higher education. Locking these people out of higher education means that individuals are not getting the opportunity to participate in higher education and develop the advanced knowledge and skills that will help them contribute to the labour market and society at large.

Many countries offer post-secondary non-tertiary education (ISCED 4) programmes, which can provide education and training to those who do not meet entry requirements or who do not wish to enter higher education. These programmes can lead directly to jobs or provide a pathway to higher education.

After commencing a study programme, students may discover that it does not suit them or their needs. Flexible pathways between programmes and higher education institutions help ensure that students enrol in suitable programmes and gain qualifications applicable to the labour market. Students may also wish to continue studying and build on their qualifications, either at a higher level in the same institution or through a different institution. The attainment of higher level qualifications can greatly benefit individuals in the labour market and can contribute to the economy more broadly.

National qualifications frameworks can facilitate pathways into and within higher education. They function as a translation device to help make national qualifications more transparent and easily understood, which helps people move between different education sectors and institutions, as well as into the labour market. They can also be used to help individuals gain recognition for prior learning and experience. In this way, they promote the mobility of students and workers and facilitate lifelong learning.

Key issues in Mexico

There are limited pathways to higher education in Mexico. The country has three strands of upper secondary education: general, combined and vocational. However, only the first two allow access to higher education, which excludes access for graduates from vocational upper secondary education.

There is limited recognition of prior learning outside higher education and limited recognition of qualifications gained abroad. The Secretarial Agreement 286 regulates the recognition of these forms of learning, and although the process is slow, recent reforms have resulted in quicker processes. Selected public higher education institutions are authorised to assess prior learning and overseas qualifications and may impose additional

conditions for recognition, such as examinations to assess the knowledge and skills acquired.

The government recently introduced the National Emergent Academic Programme for Higher Education Studies Completion (PUENTES), which offers the possibility to Mexican higher education students from the United States to continue their studies in Mexico by facilitating the recognition of their studies and entry into Mexican higher education institutions.

There are no pathways for students to move between short-cycle programmes (ISCED 5) and bachelor's programmes (ISCED 6). A regulated path from a short-cycle to a bachelor's programme in the same area only exist if both are offered in the same institution. There is no pathway for students in bachelor's programmes at risk of dropping out to move to a short-cycle programme in the same field.

Similarly, there are no pathways between the two master's programmes (ISCED 7), the master's specialisation programme (*especialización*) and the master's (*maestría*), or between the specialisation programme and the doctoral programme (ISCED 8).

Box 1.9. Policy recommendations: Ensuring better pathways into and across the higher education system

17. Facilitate pathways into and between programmes and institutions

- Ensure the National Qualifications Framework is used more effectively to facilitate pathways into and within higher education, including through the recognition of prior learning.
- Establish a comprehensive credit recognition scheme for Mexico that is aligned with the National Qualifications Framework.

18. Ensure efficient processes for recognition of prior learning and foreign qualifications

- Evaluate recent reforms of recognition processes to identify how they can be further improved.

19. Enable pathways between levels of study

- Recognise the completion of short-cycle programmes (ISCED 5) as a potential entry path for bachelor's programmes (ISCED 6) in different institutions. A pilot programme could be implemented in the technological subsystems.
- Recognise the completion of the master's specialisation programme (*especialización*) as a potential entry path for the master's programme (*maestría*).

On an individual basis, students can apply for recognition of their previous studies, but there are no regulations in this respect. This restricts the educational possibilities of students who would like to attain higher levels of education and limits the ability of the higher education system to respond more rapidly to the emerging needs of the economy.

The National Qualifications Framework, released in 2014 and currently under review by the SEP, could be a lever to ensure pathways to higher education and recognition of prior learning. However, it has not been exploited and remains largely unknown.

The absence of a common credit recognition scheme for higher education or individual subsystems also hinders the recognition of prior learning and mobility. Efforts were made in 2009 to create a common credit system for the technological subsystems (*espacio superior de educación tecnológica*) to facilitate student mobility within and between the subsystems. Although this scheme has improved some processes, implementation has been difficult and incomplete due to factors such as differences in the syllabus and work-based learning requirements, meaning that recognition is not applied automatically or systematically.

Fostering lifelong learning

Rationale

Higher education has an important role to play in lifelong learning by providing flexible learning environments for adults throughout their working lives. This includes support for the participation of non-traditional students, such as older adults and full-time workers.

New flexible modes of programme delivery (e.g. part-time, at different times of the day and week, block sessions, distance, online and mixed mode) facilitate the participation of people who would like or need to gain qualifications, re-train and improve their skills throughout their working lives to meet changing labour market needs.

To support lifelong learning, higher education institutions can offer either programmes that lead to degree qualifications or short, non-award training courses to the general public for professional development or general interest. The latter are often delivered through centres for continuing education in higher education institutions on a fee-paying basis.

Key issues in Mexico

Lifelong learning is not well developed in Mexico. Current demand to higher education institutions is insufficient, and institutions could offer more options for lifelong learning.

Over 45 million people in the Mexican workforce (83% of the total) have upper secondary or lower levels of education. The higher education system does not offer post-secondary non-tertiary education (ISCED 4), which limits the options for many to gain higher levels of education. There is an urgent need to provide more opportunities for these adults to gain skills through educational qualifications and to re-train throughout their working lives to keep up with the rapidly changing needs of the economy and the labour market.

The offer of part-time or flexible programmes (i.e. those offered in the evenings, weekends or in intensive blocks) is very low and there is little support for students who try to combine work and study. However, Mexico has taken positive steps regarding distance and online education, which can also facilitate lifelong learning. In 2012, the SEP established the Open University of Distance and Online Education (*Universidad Abierta y a Distancia de México, UnADM*) to increase the offer of distance and online programmes. Currently, 15% of students study through distance and online education (25% in private higher education institutions). However, the quality of these programmes raises concerns and there are no established criteria for their evaluation and accreditation.

Over 110 higher education institutions across all subsystems act as authorised certifiers for The National Council for Standardisation and Certification of Labour Competencies (CONOCER), an agency of the SEP that oversees the National Skills System. For a fee,

participants can have their existing skills evaluated or can undertake a training course, followed by an evaluation, to help them develop specific knowledge and skills. In 2017, 41.1% of certifications were awarded to higher education graduates, and around 70% for a wide range of ICT skills.

From a demand side, it is uncommon for graduates, who graduate on average at the age of 24 (OECD, 2018_[51]), to continue higher education during later stages of their professional career. In addition, there is not a culture of training within Mexican companies, partly as a result of the large share of companies operating in the informal economy and a perception among employers that training will provide more opportunities for trained employees to find alternative work and leave the company (CIDAC, 2014_[13]). Although large companies provide more training than smaller ones, they only employ 11% of the workforce (INEGI-ENAPROCE, 2015_[33]) and prefer to provide training internally or through private training providers (World Economic Forum, 2018_[34]), which limits the role of higher education institutions.

Box 1.10. Policy recommendations: Fostering lifelong learning

20. Support lifelong learning through more flexible higher education

- Encourage and support higher education institutions to deliver more part-time and flexible study programmes, including high-quality distance and online programmes, to provide students with the opportunity to combine work and studies.
- Support the development of robust evaluation and assessment criteria for online programmes and their accreditation.
- Encourage the delivery of continuing education, which offers short courses for a broad range of people, and increased collaboration between higher education institutions and CONOCER to certify knowledge and skills.

Working together effectively to enhance labour market relevance and outcomes

Improving and better co-ordinating information on higher education and the labour market

Rationale

Evidence-based policy development and implementation is needed to effectively allocate resources across the higher education system and address critical skills gaps. The evaluation of programmes is crucial. Published information is essential for a system to be responsive to stakeholders. The provision of complex and diverse data from multiple sources requires a comprehensive whole-of-government approach and the involvement of the entire higher education system.

Information should be timely, reliable, easily accessible and user-friendly for different stakeholders. Higher education institutions can collect information about their own programmes and graduates and use this alongside external information to guide the offer and content of study programmes and help students in their choice of programme. Good information on higher education institutions and programmes is also essential for career guidance counsellors to be effective. Employers can also use this information to identify

potential areas of collaboration with higher education institutions, while governments need this information to effectively steer the higher education system and monitor its performance.

Key Issues

Information on the labour market relevance and outcomes of higher education is limited in Mexico. The SEP, some state secretariats of education, the Secretariat of Employment, the Secretariat of Economy and CONACyT all produce relevant information, but this is not co-ordinated and different methodologies are used to collect and analyse the data and information. This limits the possibility of aggregating and comparing data across subsystems, regions, and over time. There is no foresight work with forecasting of labour market needs that could help stakeholders plan ahead. Furthermore, there are substantial gaps at the state and national level in terms of graduate labour market outcomes and their experience in higher education. Some higher education institutions conduct their own graduate surveys, but this practice is not widespread, the quality of the data is low and results are not comparable.

Relevant information is currently presented across over a dozen websites and publications that belong to different secretariats and agencies, with many not easily accessible to stakeholders or user-friendly. As a result, data sources are not effectively used jointly and systematically for all stakeholder decision making.

Higher education institutions are not using this information to guide the programmes they offer or develop curriculum. Students do not fully utilise the available information when choosing which programme to study, and families still play a major role in this decision. In addition, employers lack the information needed to identify how to play a more active role in their collaboration with higher education institutions.

Better data could help to steer the system more effectively. The government is not using all information available when making decisions about the allocation of resources across the higher education system, or in designing measures to address gaps. In addition to the block grants, funding is largely provided to public institutions through targeted funding programmes which have very broad objectives (e.g. calls for proposals by the SEP to increase education quality). Performance-based funding or funding formulas are not used to allocate funding in the Mexican higher education system. If a funding allocation model using these mechanisms were to be implemented, as recommended by the OECD's broader review of higher education (OECD, 2019^[14]), Mexico will need to ensure it has the necessary data.

Box 1.11. Policy recommendations: Improving information on higher education and the labour market

21. Standardise and co-ordinate the collection and dissemination of information

- Establish a working group that brings together all of the agencies that collect information on higher education and the labour market to standardise data collection and analysis for better oversight and co-ordination that help ensure robust, relevant, and easily accessible information.
- Develop a single, easily accessible and user-friendly portal that provides relevant information on higher education and the labour market to all stakeholders.

22. Develop projections of future labour market needs to help inform higher education

- Support the development of labour market projections that higher education stakeholders and the government can use to help inform decisions.

23. Develop information on the labour market outcomes of graduates and the student experience in higher education

- Establish a regular national graduate survey that provides information on graduate outcomes following completion of programmes, including employment, field of employment and further education.
- The graduate survey could be based on the National Survey of Labour Market Outcomes for Upper Secondary Education Graduates (Encuesta Nacional de Inserción Laboral de los Egresados de la Educación Media Superior, ENILEMS) undertaken by the National Institute of Statistics and Geography (INEGI).
- Consider linking the unique professional licence number (número de cédula profesional) with existing labour market data for quantitative data on graduate outcomes. This would require co-ordination with the National Institute of Transparency, Access to Information and Personal Data Protection (Instituto Nacional de Transparencia, Acceso a la Información y Protección de Datos Personales, INAI).
- Establish a regular national survey of employers to get their views on the skills levels of graduates and what types of skills they are looking for.
- Establish a regular national student experience survey to better understand student choices and their experiences in higher education, including learning and teaching practices and other factors that help them develop labour market relevant skills.
- Ensure the collection of information by subsystems and for different groups of students.

24. Develop a robust culture of evaluation to support evidence-based policy development

- Develop evaluation mechanisms that include ex-ante and ex-post evaluation of programmes, as well as mechanisms that capture and analyse information about current and planned higher education practices that seek to strengthen the labour market relevance and outcomes of higher education.

There is not a strong culture of programme evaluation that can inform evidence-based policy development.

Fostering collaboration across secretariats, government agencies and between levels of government***Rationale***

Co-operation between secretariats, government agencies and levels of government is important for developing coherent policy initiatives and a whole-of-government approach to enhancing the labour market relevance of higher education. This approach can help prevent different levels of government and agencies from operating in silos and sending

contradictory signals to higher education institutions. Co-ordination with labour market authorities is important to ensure that higher education programmes are aligned with future labour market needs.

Higher education institutions may be steered through both education and research portfolios, which can create conflicts and cross-purposes. Co-ordination with research authorities is therefore important to ensure that the activities of higher education institutions are an integral part of the broad national innovation strategy and policy framework.

Some countries have addressed this challenge by institutionalising arrangements for policy consultation within government and developing intersecretarial bodies or cluster groups that link higher education officials to public authorities with responsibility for complementary lines of policy, typically representatives from the secretariats of labour and economy.

A number of countries have established business-higher education roundtables with representatives from leading companies and higher education institutions to help students transition more effectively from education to the labour market. These roundtables may also have a role in strengthening research collaboration between industry and higher education institutions at regional and national levels.

Key issues in Mexico

The Mexican higher education system, with its 13 subsystems, provides a high level of diversity, but overall lacks co-ordination. Apart from the high-level priorities set out in the Sectoral Education Plan, there is no comprehensive government planning of higher education. This makes it difficult to steer the system and implement policies.

The only mechanism that brings together the 32 state secretariats for education is the National Council of Education Authorities (*Consejo Nacional de Autoridades Educativas*, CONAEDU), which has a higher education chapter but is not active. There is no mechanism to co-ordinate the planning of higher education between the federal and state governments. The State Commissions for Higher Education Planning (*Comisión Estatal para la Planeación de la Educación Superior*, COEPES) were created to do this, but their effectiveness was varied. Public funding for COEPES was discontinued, and commissions currently only operate in some states.

CONACyT has a prominent role in postgraduate education and research, but its connections with the SEP have weakened over time. This has affected the alignment between undergraduate and postgraduate programmes and limits the connections between education and research in higher education.

Box 1.12. Policy recommendations: Fostering collaboration across secretariats, government agencies and between levels of government

25. Strengthen the role of the National Productivity Committee (CNP) in enhancing the labour market relevance and outcomes of higher education

- Strengthen the CNP as a platform to better co-ordinate the work of the SEP with CONACyT, as well as the Secretariats of Economy, Employment and Finance at the national and state levels.

- Strengthen the role of the CNP subcommittee of human capital and establish sectoral roundtables between higher education and business representatives. The human capital subcommittee could contribute to the development of the national strategy to enhance the labour market relevance and outcomes of higher education.
- Include university associations as members of the CNP to strengthen engagement between higher education and employers.

26. Establish a national body to co-ordinate higher education initiatives between the federal and state governments

- Establish a national body to co-ordinate higher education across levels of government and provide a mechanism for policy alignment across levels of government to enhance the responsiveness of higher education to regional and local needs. The design and development of the new body should build on the experience of COEPES.

There is little collaboration between federal secretariats and agencies on higher education. The National Productivity Committee (CNP) is currently a mechanism to co-ordinate across government. The subcommittee on human capital focuses on how education can better contribute to employment and productivity. In 2018, the CNP developed a skills framework for Mexico (*Sistema de Formación de Habilidades*), which builds on the recommendations of the OECD's Skills Strategy of Mexico in 2017.

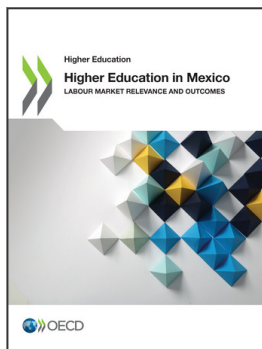
The CNP's Subcommittee on Human Capital (*Subcomité de Capacitación y Certificación de Competencias Laborales*) could play an important role in the design of a strategy on the labour market relevance of higher education. It currently brings together secretariats (education, economy, finance and employment), CONACyT, business associations and trade unions. However, only four higher education institutions participate and there is no representation from university associations. The CNP was designed to have committees at the state level, but few states have active committees.

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