

Chapter 6. Enhancing labour market relevance and outcomes through policy

This chapter examines the approaches that Mexican policy makers can take to steer the higher education system towards greater labour market relevance. It focuses on how well different policy levers are working and discusses where new policy responses are required. Evidence from formal evaluations and recent OECD reviews on related topics are used for the analysis, as well as evidence gathered as part of the OECD review team's interviews and workshops with key stakeholders. The chapter also provides international examples that Mexico may wish to consider when designing new ways to better support the labour market relevance of higher education.

Skills are the foundation for inclusive growth in Mexico and, as discussed in previous chapters, higher education contributes significantly to inclusive growth in various ways. However, Mexico lacks a comprehensive strategic vision for driving the contribution of higher education to the economy and society more broadly. Furthermore, it lacks a strong, cohesive legal framework that outlines the objectives of higher education and the roles and responsibilities of the two levels of government and higher education institutions.

To meet the various needs of the labour market and the community, the higher education system has evolved over time into a complex set of 13 subsystems with varying levels of oversight by government. The quality assurance system is fragmented and has numerous agencies. Institutional and programme accreditation is voluntary and unevenly spread across the system, leaving students and employers unsure of the quality of higher education. Various regulations have been put in place to address quality issues over time, which have created a complex system of licensing and accreditation, with different processes for public and private higher education institutions. All these factors have serious implications for the labour market relevance and outcomes of higher education in Mexico.

The analysis in Chapter 5 suggests that higher education institutions do not make full use of many of the practices that can effectively help students develop labour market relevant skills. One of the main barriers for the widespread use of these practices is the weak policy framework for higher education in Mexico. There are very few policies aimed directly at enhancing the labour market relevance and outcomes of higher education, and those that exist are limited to specific subsystems. This is of particular concern given the vocational focus of higher education in Mexico and its emphasis on delivering graduates with bachelor's qualifications that lead to jobs.

This chapter considers existing policy levers in Mexico and identifies how these could be strengthened to enhance the labour market relevance and outcomes of the higher education system. It also provides policy advice on additional approaches that could improve the performance of the higher education system. These policies are aimed at enhancing the labour market relevance and outcomes of the higher education system by:

- Aligning higher education with the changing needs of the labour market.
- Helping students succeed in higher education and the labour market.
- Working together effectively to enhance labour market relevance and outcomes.

Current policies to support the labour market relevance and outcomes of higher education

Policy levers to enhance labour market relevance and outcomes in higher education

Countries signal their priorities in higher education by providing a clear articulation of the expectations of institutions. This is usually set out in a strategic document that sets the goals for the higher education system together with a long-term vision and framework for the suite of policy levers aimed at achieving those goals (OECD, 2008_[1]). This approach provides a mechanism for government to steer the higher education system through incentives that shape institutional behaviour towards national policy goals. A strategic approach to enhancing the labour market relevance and outcomes of higher education in

Mexico is largely absent, and targeted policies only exist in the three technological subsystems.

The complexity of the Mexican higher education system makes it difficult for the government to steer change. While many higher education systems have a wide range of institution types, and some operate with a small number of distinct subsystems, Mexico has created 13 subsystems of higher education institutions that differ considerably in terms of governance structures, funding arrangements, and government influence and dependence.

The share of the private higher education sector, where the reach of policy levers is the lowest, accounts for approximately 70% of institutions and 33% of total student enrolment. In private institutions, regulatory policy is confined to voluntary programme licensing and accreditation. Unlike in many other countries, the government is reluctant to use available policy levers, such as conditions on funding, to steer higher education institutions, which enjoy a high degree of autonomy. Fully-autonomous institutions enrol 39% of students. On the other hand, the government directly manages and regulates the direct-provision subsystems, which account for less than 30% of student enrolment.

Funding is a key policy lever that can strategically steer higher education and encourage institutions to adhere to national priorities and objectives. This can be done by allocating some or all of the block grant on the basis of a formula that measures performance. However, the allocation of the block grant to cover staff and operating costs (ordinary funding) to public institutions in Mexico is based on historical trends and is adjusted each year, in negotiation with individual institutions, depending on the availability of federal funds.

Targeted funding (extraordinary funding) can be a very powerful policy lever to steer the behaviour of higher education institutions (Moreno Arellano, 2017^[2]) (Mungaray et al., 2016^[3]), and all public higher education institutions in Mexico are eligible for targeted funding allocated to institutions for specific government programmes. While there is no targeted funding focused exclusively on enhancing the labour market relevance and outcomes of higher education in Mexico, current targeted funding programmes are aimed at the following three key areas, which can help students develop labour market relevant skills and achieve good outcomes:

- Improvements in infrastructure and expansion of the higher education system.
- Upgrading the qualification levels of full-time academic staff.
- Supporting institutional projects to increase the quality of learning and teaching.

However, there are criticisms of these targeted funding programmes, such as fragmentation, complex application procedures and overlapping and unclear objectives, (OECD, 2019^[4]), and the use of targeted funding by higher education institutions to cover basic costs due to insufficient block grant funding (ANUIES, 2017^[5]).

The government can also use information policy levers to enhance the labour market relevance and outcomes of higher education. Information can encourage students to select programmes, help employers in their planning and recruiting processes, and help higher education institutions be more responsive to labour market demands, while enabling them to influence future demands. However, there are significant information gaps in the labour market information on higher education in Mexico. In addition, the complexity of the Mexican higher education system, regional diversity, and the lack of co-ordination mechanisms greatly limit the use of existing information policy levers.

Table 6.1. Policies outside the higher education domain that can affect labour market relevance and outcomes

Policy area	Key initiatives
Education	Education reform (2012) helped raise quality in lower levels of education and made upper secondary education mandatory.
Employment and productivity	<p>Federal Labour Act (<i>Ley Federal del Trabajo</i>) (1970) regulates labour relationships in higher education institutions, but does not regulate internships or other student work-based learning activities.</p> <p>Training programmes funded by the Secretariat of Labour and Social Welfare (STPS) (e.g. Training Agents Programmes and PROCADIST), which are freely available for all workers.</p> <p>Employment National Service and employment fairs organised by STPS to support job seekers.</p> <p>National Productivity Committee (<i>Comité Nacional de la Productividad</i>, CNP) creates national initiatives to improve competitiveness with representatives from the secretariats of education, government, chambers of commerce and unions. CNP has a human capital sub-committee.</p>
Regional	<p>Federal Law on Special Economic Zones (2016) regulates interventions to improve development in geographic areas that are lagging behind.</p> <p>Industrial Clusters policy funds the establishment of industrial clusters in specific areas (e.g. automotive and aerospace) to increase employment and development. Some clusters include higher education institutions as members.</p> <p>Government initiatives for regional development affect the provision of higher education in a region and its role in social and economic development.</p>
Science, technology and innovation	<p>The General Council for Scientific Research, Technological Development and Innovation (<i>Consejo General de Investigación Científica y Desarrollo Tecnológico e Innovación</i>) makes strategic decisions related to science, technology and innovation and involves federal secretariats of education, internal affairs, finance, health, energy and economy under the auspices of the President of Mexico.</p> <p>Science and Technology Act (2009) (<i>Ley de Ciencia y Tecnología</i>) defines the roles and responsibilities of federal and state actors for science and technology.</p> <p>PECITI, Special Programme for Science, Technology and Innovation (<i>Programa Especial de Ciencia, Tecnología e Innovación</i>) establishes national research priorities.</p> <p>CONACyT, the National Science and Technology Council (<i>Consejo Nacional de Ciencia y Tecnología</i>), has a wide range of targeted funding programmes for research and innovation for companies, postgraduate students and higher education institutions.</p> <p>Inter-sectoral Innovation Committee (<i>Comité Intersectorial para la Innovación</i>) promotes, designs and operates the national innovation policy to enhance the innovation culture.</p> <p>Mexican Innovation Observatory (<i>Observatorio Mexicano de Innovación</i>), funded by the Secretariat of the Economy, collects and publishes data on innovation activity in Mexico, compares it internationally and evaluates the impact of the main innovation policies.</p> <p>Science and technology parks have been created by federal and state governments in proximity to some higher education institutions and research centres.</p>
Internationalisation	ProMexico, Mexico's internationalisation agency, co-ordinates internationalisation efforts at federal and state levels. There are currently little to no connections to higher education and higher education institutions.
Entrepreneurship	INADEM, National Institute of the Entrepreneur (<i>Instituto Nacional del Emprendedor</i>), supports entrepreneurs, micro, small and medium enterprises through the National Fund for Entrepreneurs. It also support the establishment and operations of incubators and accelerators in higher education institutions.

Policies outside the higher education domain that can affect labour market relevance and outcomes

Mexico has a range of policies outside the higher education domain that can affect the labour market relevance and outcomes of higher education, including: wider education policy; employment policy; regional policy; science, technology and innovation policy; entrepreneurship policy; and internationalisation policy (Table 6.1). The most relevant of these policies will be discussed in the remainder of this chapter.

Aligning higher education with the changing needs of the labour market

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

While there is some public debate on the need to enhance the labour market relevance and outcomes of higher education in Mexico, there is no strategic vision for higher education that highlights its importance and guides future policy development over the medium and long term. The sectoral programmes of the federal secretariats of education, labour and social welfare, and economy are designed independently, with little focus on the role of higher education for inclusive growth.

Mexico has no common legal framework that comprehensively regulates the higher education system. Existing legislation, the Higher Education Co-ordination Act (1978) (*Ley de Coordinación de la Educación Superior*) and the Education Act (1993) (*Ley General de Educación*), are high-level legal documents that, as discussed in Chapter 3, do not include any provisions related to the labour market relevance and outcomes of higher education. Stakeholders advised the OECD that the Higher Education Co-ordination Act of 1978 did not reflect the current situation in higher education in Mexico and lacked sufficient detail around the roles and responsibilities of governments, higher education institutions and other key actors (OECD, 2019^[4]). In 2017 and 2018, ANUIES, with the support of a number of members of Congress, put forward a proposal for a new draft act (*Anteproyecto de Ley General de Educación Superior*) to modernise the 1978 legislation, clarifying the roles and responsibilities of different actors. However, the draft act has not been debated in Congress and has not progressed towards becoming legislation.

There are a number of government initiatives in place that could help improve the labour market relevance of higher education, but they are disjointed and poorly co-ordinated. Policies have been introduced over time, without any attempt to create a cohesive framework with a long-term vision. Some successful policies have been allowed to lapse, while others that appear not to be very effective continue to be implemented. Several higher education institutions have their own initiatives to help students develop labour market relevant skills, as discussed in Chapter 5. However, funding and quality in general are prioritised over aligning higher education with the labour market, which leaves initiatives focused on improving the labour market relevance of programmes and graduate outcomes fragmented in terms of reach and impact. Moreover, there are no effective mechanisms in place to monitor and evaluate the effectiveness and impact of existing policies and practices. Without change, policy initiatives and the activities of higher education institutions will remain the accumulation of short-term decisions.

A national strategy on enhancing the labour market relevance and outcomes of higher education would help highlight the importance of the issue and raise awareness among higher education institutions, students and employers. A strategy would provide a

cohesive framework for a suite of public policy initiatives to guide and complement the activities of higher education institutions, and ensure the effective co-ordination across levels of government, agencies and higher education stakeholders. The strategy should be anchored in a new federal legislation that specifies the respective roles and responsibilities of the federal government and agencies, as well as those of publicly funded institutions. The strategy should be developed in consultation with higher education institutions, students, graduates, employers and the broader community, and should involve the relevant secretariats across the federal and state governments.

Promising first steps in this direction have already been made with the creation of the inter-secretarial National Productivity Committee (CNP) in 2012, which recently developed a skills framework for Mexico (*Sistema de Formación de Habilidades*). This skills framework covers all levels of education and the skill needs of the strategic industries. CNP's co-ordinating role will be discussed in the last section of this chapter.

Strengthening the quality of higher education

Representative data on the skills of higher education graduates in Mexico is not available, however, programme-specific assessments of knowledge and skills at the end of bachelor's programmes (*Exámenes Generales para el Egreso de Licenciatura*, EGEL) suggest poor skills levels for many higher education graduates. This is supported by the views of employers and graduates themselves. Employers claim that study programmes do not deliver what the labour market needs in terms of discipline-specific knowledge and transversal skills. In discussions with the OECD review team, graduates who are currently employed raised concerns about the quality of their studies and the limited relevance for their current jobs (see Chapter 3).

Raising the quality of higher education has been a policy priority in Mexico for decades, and strengthening the quality and relevance of upper secondary and higher education is a key objective of the Sectoral Education Programme 2013-2018 (*Programa Sectorial de Educación 2013-2018*). Targeted funding is a key policy lever used to raise quality in higher education; however, it only reaches public higher education institutions, which account for 67% of student enrolment but only 30% of institutions.

Qualifications frameworks can help assess, develop and enhance quality. The Mexican National Qualifications Framework was released in 2014 and is currently under review by the Secretariat of Public Education (*Secretaría de Educación Pública*, SEP). It covers all levels of education and was expected to serve as a reference for the recognition of qualifications and learning outcomes, as well as for certification. The framework was also expected to help employers, workers, education institutions and the government to work together in setting agendas and making decisions in skills matters (UNESCO, 2014^[6]). However, the framework has not yet reached visibility within the higher education system, and is not widely used among employers.

The quality assurance system

Most countries in the European Higher Education Area and beyond require higher education institutions to have policies for quality assurance, with full transparency imperative in some countries (De Lel et al., 2018^[7]). In Europe, this is guided by the European Standards and Guidelines for Quality Assurance in Higher Education (ESG) (ENQA, 2015^[8]). The ESG do not prescribe how quality assurance processes should be implemented, instead they provide generic standards and guidelines for institutions,

quality assurance agencies and governments in areas that are important for successful quality provision in higher education.

In Mexico, the quality assurance system is voluntary, complex and fragmented, it lacks transparency and coherence and is costly. The SEP has recognised multiple external quality assurance agencies that address different levels of higher education and fields of study. As discussed in Chapter 3, these have overlapping functions, apply different criteria, and use different review mechanisms. To enhance the co-ordination and harmonisation of the different approaches, in mid-2017 the SEP reactivated the Commission for the Co-ordination of the Higher Education Evaluation Agencies (*Comisión de Coordinación de los Organismos de Evaluación de la Educación Superior*, COCOEES). It is still too early to assess the effectiveness of this commission.

A long-term policy objective of most countries is to enhance the internal quality assurance capacity of higher education institutions with (self-developed) standards and guidelines for learning and teaching activities, staff development and ongoing monitoring and periodic (external) reviews of programmes, student admission and progression (ENQA, 2015^[8]). In Mexico, there is not a strong culture of internal quality assurance across the higher education system, but there have been improvements in the public subsystems through targeted funding programmes.

The Mexican Constitution allows any person to establish a higher education institution offering education programmes. The only federal policy that regulates the quality of higher education is the Secretarial Agreement 17/11/17 for the Recognition of Official Validation of Studies (*Acuerdo Secretarial para el Reconocimiento de Validez Oficial de Estudios*, RVOE), which substituted the Secretarial Agreement 279. The RVOE establishes the basic requirements that programmes offered by private higher education institutions need to comply with. A RVOE is awarded indefinitely, although it can be removed in case of non-compliance. Repeated audits and evaluations are not systematic, and only two of over 20 000 RVOEs were removed in 2017. Although requisites have increased in this renewed agreement, a RVOE still does not guarantee minimum quality standards.

Programmes that do not have a RVOE are excluded from the higher education system, and there is no information about how many students are enrolled in these programmes. Graduates from these programmes do receive a professional license (*cédula profesional*) upon graduation, which is mandatory for certain professions. There are cases where students enrolled in programmes without a RVOE have put pressure on the government to award a RVOE at a later stage.

Undergraduate programmes in public higher education institutions, and programmes with a RVOE in private institutions, can voluntarily apply for programme evaluation or accreditation by COPAES, the Higher Education Accreditation Council (*Consejo para la Acreditación de la Educación Superior*), and/or CIIES, the Inter-institutional Committees for Higher Education Assessment (*Comités Interinstitucionales para la Evaluación de la Educación Superior*). In addition, health programmes must apply for the approval of CIFRHS, the Inter-institutional Commission for the Education of Human Resources in the Health Sector (*Comisión Interinstitucional de Formación de Recursos Humanos en Salud*) (see Chapter 3).

For public higher education institutions, successful programme evaluation or accreditation as a “quality programme” is a requirement of targeted funding programmes; while for private institutions, the main incentive is reputation and increased attractiveness

for students. In 2017, only 17.3% of programmes that could apply to be accredited or assessed by COPAES and CIEES qualified as “quality programmes”, which corresponds to 34.8% of programmes in public higher education institutions and 6.4% in private institutions.

Currently, less than half (43.1%) of total undergraduate enrolment is in evaluated or accredited programmes, corresponding with 55.5% of enrolment in public higher education institutions and 15.4% in private institutions. Almost 17% of higher education institutions have at least one “quality programme”. Differences by state are also large: while in Nuevo León, 64.3% of undergraduates programmes are “quality programmes”, Chiapas has less than half of that (30.2%) (ANUIES, 2017^[5]). This shows the limited and unequal coverage of the quality assurance system.

CONACyT, in collaboration with the SEP, evaluates the quality of postgraduate programmes. Currently, 20% (2 297) of all postgraduate programmes offered are listed in the National Programme of Quality Postgraduate Studies (*Programa Nacional de Posgrados de Calidad*, PNPC). Around 11% of institutions and research centres have at least one postgraduate programme listed in the PNPC, but the distribution is unequal. Almost two-thirds of PNPC programmes are located either in a federal or state university, the two most research-oriented subsystems, while only 17 of the over 2 500 private higher education institutions have PNPC programmes.

Institutional accreditation for private higher education institutions has existed since 2003. Accreditation is implemented by FIMPES, the Federation of Mexican Private Higher Education Institutions (*Federación de Instituciones Mexicanas Particulares de Educación Superior*). The 109 members account for over half of the enrolment in private higher education institutions.

The National Centre of Higher Education Evaluation (*Centro Nacional de Evaluación de la Educación Superior*, CENEVAL) developed an indicator to measure academic performance per programme (*Indicador de Desempeño Académico por Programa*, IDAP) based on the results of the EGEL test. Programmes are classified as level one, level two and without level. The SEP considers IDAP as one of the quality indicators to award targeted funding, but it is questionable as to how well the indicator measures quality, as only a minimum of ten graduates are required to perform the test.

Targeted funding to increase quality

The federal government provides targeted funding to support quality in higher education through three key programmes: the Programme for the Professional Development of Academic Staff (*Programa para el Desarrollo Profesional Docente*, PRODEP), the Programme to Strengthen the Quality of Education (*Programa Fortalecimiento de la Calidad Educativa*, PFCE), and the Programme to Support the Development of Higher Education (*Programa de Apoyo al Desarrollo de la Educación Superior*, PADES). While these programmes are directed at improving the quality of higher education, they include some aspects related to labour market relevance and outcomes.

Funding under PRODEP covers all levels of education, including 9 of the 11 public higher education subsystems. Funding for higher education institutions is focused on supporting full-time academic staff with the “desired profile”, funding the activities of academic research groups (*cuerpos académicos*), and scholarships for full-time academic staff to gain postgraduate level qualifications. The desired profile for full-time academic staff includes a postgraduate level degree, full-time teaching and academic support

(*tutorías*), the transfer of knowledge (e.g. publications, conference presentations), and active participation in higher education institutional affairs and outreach activities (e.g. committees, organisation of events). The total funding for PRODEP in 2018 was approximately MXN 660 million (Mexican peso) (USD 34 million) and is distributed among 492 higher education institutions.

Among public higher education institutions, 70 are eligible for federal government funding under PFCE (Strengthening Education Quality Programme). The programme has a wide range of objectives, including quality, student access and retention. It gives priority to institutions that can demonstrate a certain level of quality, engagement with social partners and collaborative activities with industry. As a result, the programme supports good practices but does not improve quality or address quality issues. The funding for PFCE in 2018 was approximately MXN 1 billion (USD 52 million), which was allocated to 575 projects in 60 higher education institutions.

PADES provides strategic funding to higher education institutions for a period of nine months in order to: increase quality in higher education (including support for training full-time academic staff and to fulfil the criteria of accreditation agencies); embed “transversal content” into the curriculum (e.g. sustainability, gender equity and entrepreneurship); increase and strengthen the diversification of the education offer; and enhance innovation, internationalisation, and engagement with social partners. The funding for PADES in 2018 was approximately MXN 437 million (USD 22 million).

Stakeholders reported to the OECD review team that the length of the projects under each of these programmes is too short to have a tangible impact in the institutions. This is exacerbated by the one-off nature of the projects, which cannot be renewed, and guidelines that prevent institutions from applying for more funding. PFCE and PADES both support advanced practice instead of closing gaps by building capacity in institutions that lag behind.

Mexico needs to comprehensively address quality in higher education, not only by recognising existing strengths, but by building capacity in the subsystems and higher education institutions that are lagging behind. In line with the OECD’s broader review of higher education (OECD, 2019^[41]), the aim should be to improve the quality of higher education through strengthened institutional and programme accreditation, and to ensure that programme accreditation takes account of the National Qualification Framework.

Integrating labour market relevance into quality assurance mechanisms

Quality assurance mechanisms can be an effective regulatory policy lever to encourage higher education institutions to enhance the labour market relevance of their programme offer. However, caution should be taken to avoid programmes becoming too focused on short-term labour market needs, and it should be ensured that the curriculum is based on national and international standards and that students develop key transferable skills to help graduates in the long term.

For higher education institutions in the three technological subsystems, the legislative framework requires a series of practices that can enhance labour market relevance and outcomes, including engagement with employers in governance, as discussed in Chapter 5. The requirement of a feasibility study when proposing the creation of a new programme can also be a useful practice. These studies must include employers’ perspectives and labour market data on the relevance of the proposed programmes. Institutions need to report on these practices to their co-ordinating agency within the SEP.

The institutional accreditation of private universities carried out by FIMPES does not include labour market relevance as criteria, but focuses on the number of programmes already accredited in the institution. The assessment criteria provided by COPAES and CIEES for undergraduate programme evaluation and accreditation includes several aspects related to labour market relevance and outcomes of higher education (Table 6.2).

Table 6.2. Criteria of evaluation and accreditation of programmes in Mexico

Higher Education Accreditation Council (COPAES)	Inter-institutional Committees for Higher Education Assessment (CIEES)
<p>Academic staff</p> <p>Students</p> <ul style="list-style-type: none"> • Graduation rates • Results of EGEL • Programmes to reduce drop-out rate and graduates without professional license <p>Study programme</p> <ul style="list-style-type: none"> • Existence of studies that ensure the relevance of the programme for society and labour market • Development of transversal skills • Flexibility (dual education, optional modules or lateral exits, participation of student in the curricula) • Periodicity of curricula update and consideration of societal needs and labour market for this update <p>Assessment</p> <ul style="list-style-type: none"> • Transversal education • Entrepreneurship programme • Extracurricular activities • Career services • Learning support services • Tutorials • Engagement (<i>vinculación</i>) <p>Work-based learning</p> <ul style="list-style-type: none"> • Social service • Agreements with social partners • Graduate surveys • Student and staff mobility programmes • Registry of students seeking for a job or work-based learning opportunity (<i>bolsa de trabajo</i>) <p>Research</p> <ul style="list-style-type: none"> • Infrastructure and equipment • Management and funding 	<p>Area 1. Fundamentals and operation</p> <ol style="list-style-type: none"> 1. Aims of the programme 2. Reasons for the need of the programme 3. General conditions for the operation of the programme <p>Area 2. Curricula</p> <ol style="list-style-type: none"> 1. Educational model and study plan 2. Information and communication technology (ICT) use in learning and teaching 3. Activities for integral education 4. Courses or complementary activities for transversal education 5. Teaching of foreign languages 6. Provision of external certifications for students <p>Area 3. Student pathways</p> <ol style="list-style-type: none"> 1. Entry to programme 2. Admission process and criteria 3. Existence of programmes to support students who access with low skills 4. Student trajectory 5. Student mobility and exchange programmes 6. Tutorials 7. Academic support 8. Work-based learning opportunities 9. Graduation 10. Implementation of the social service 11. Links with alumni 12. Student results <ul style="list-style-type: none"> Results in graduation exams Mastery of foreign languages Participation in extracurricular activities Graduate performance Employability / employers' opinion Fulfilment of the graduation profile <p>Area 4. Academic staff, infrastructure and services</p> <ol style="list-style-type: none"> 1. Academic staff 2. Academic infrastructure 3. Physical infrastructure 4. Support services <ul style="list-style-type: none"> Scholarship and student financial support Career service

Note: Only the second-level criteria related to labour market relevance of higher education are included.
Source: OECD compilation based on (COPAES, 2016_[9]) (CIEES, 2008_[10]).

Despite the existing criteria, stakeholders reported that its application is flawed because there are no specific guidelines for the accreditation and evaluation process or transparency regarding how the criteria is applied. Reporting requirements do not seem to be strict and the application of the criteria does not seem to be consistent among agencies. The voluntary nature of the accreditation further reduces its importance and impact.

At the postgraduate level, CONACyT establishes a set of criteria to recognise programmes listed in the PNPC in three categories: research, professional or industrial programmes. While the number of criteria related to labour market relevance outcomes is low for research programmes, it is higher for professional programmes. The 38 postgraduate programmes with industry (*programa de posgrados con industria*) are, by nature, designed and delivered in close collaboration with companies.

Going forward, the government should encourage quality assurance agencies to be more consistent in the application of criteria that reflect the labour market relevance and outcomes of higher education institutions and their engagement with social partners. The government should also encourage FIMPES to include the criteria in the voluntary institutional accreditation for private higher education institutions. Guidelines for self-evaluation reports will help, as will a greater emphasis on disseminating information on how to implement criteria in practice. The government should encourage quality assurance agencies to keep the accreditation process sufficiently flexible to respond timely to changing labour market needs.

Helping higher education institutions to engage more effectively with employers

Effective partnerships with employers allow students to transition quicker into the labour market, with potentially better labour market outcomes, and employers get primary access to highly skilled workers and can be involved in the design and delivery of programmes. Through these partnerships, academic staff learn about current applications of discipline-specific knowledge, and higher education institutions can strengthen their role as knowledge hubs in a specific industry or local economy (Wilson, 2012^[11]). Organising effective partnerships requires motivated individuals and the institutional capacity to develop successful activities into sustainable institutional practice.

Mexican law requires engagement with social partners at an institutional level in some subsystems. In the technological subsystems, social partners are required to participate in advisory and governing boards, while participation in autonomous higher education institutions is only in advisory boards. Social partners can help ensure the delivery of programmes that meet labour market needs, but in Mexico this practice is not fully used for this purpose.

There are multiple ways of organising engagement with employers at the institutional level, and examples from the United States, Spain and Norway (see Box 6.1) show that there are different roles for public policy to steer and support engagement with employers.

Box 6.1. Encouraging engagement between higher education institutions and employers in the United States, Spain, and Norway.

Advisory boards are common practice in many higher education institutions in the **United States**. They have members of various industries who seek a purposeful relationship (talent, knowledge) between higher education and industry. Operating at an institutional,

and often also departmental, level these boards offer advice, contribute to institutional development, and play a role in fundraising and programme development. Departmental advisory boards often provide a structured and sustainable model for university-industry collaboration easy to understand for all partners. Advisory boards have been traditionally strong in engineering and ICT departments.

The social councils (*Consejos Sociales*) of public higher education institutions in **Spain** are interdisciplinary advisory boards that promote inter-institutional collaboration and include social partners as members. Social councils stimulate new approaches in education and teaching by taking greater account of the local socio-economic context, challenges facing society, and their global and local dimensions. In 2005, the presidents of six institutions created the National Association of Social Councils (*Conferencia de Consejos Sociales de las Universidades Españolas*), which today has 45 public and seven private universities as members. The association is a useful platform to share experiences and learn from good practice, particularly regarding strategic plans and programmes related to employability, national internship programmes and effective community links.

A key policy lever in **Norway** to help higher education institutions work better together with employers is the mandated co-operation between higher education institutions and social partners through the councils for co-operation with working life (RSAs). The RSAs were created in 2011 by the Norwegian government in all state-owned institutions to facilitate a more structured and binding collaboration between higher education and the world of work, to strengthen the labour market relevance of degree programmes and continuing education, and to share information. Evaluations of RSAs have identified areas for improvement: they could be further linked to degree programmes, for example by establishing sub-committees at the operational level to better support programme design and delivery; and a mechanism could be developed to allow RSA committees to share experiences and good practices that can be replicated across the system.

Source: (Mandviwalla et al., 2015_[12]) for Advisory Boards in the United States; (National Association of Social Councils of Spain, (n.d.)_[13]) for the Social Councils in Spain, and (OECD, 2018_[14]) for the RSA in Norway.

Although most higher education institutions in Mexico include the concept of engagement with social partners in their mission, concrete collaboration with employers is only weakly developed and occurs primarily with large, foreign companies. Overall, there is no tradition of academic staff interacting with employers. Temporary staff mobility from higher education to industry is regulated for tenured academic staff in public universities. However, most (71%) academic staff in Mexican higher education institutions are casual staff (*profesor de asignatura*) and cannot benefit from this arrangement.

Many higher education institutions do not have enough resources to effectively organise engagement with employers and co-ordinate efforts across the institution. The engagement offices established by some institutions to address this are understaffed and underfunded. Key success factors in organising engagement offices include: a clear and simple mission statement; clear value propositions for each member and their role in monitoring and assessing the work of the engagement structure; committed members; regular meetings with interesting topics and opportunities to socialise; transparency in the generation and use of board generated funding; regular communication to stakeholders inside and outside the higher education institution; and engaging students (Zellner, 2012_[15]).

There has been no specifically targeted funding programme to support engagement offices in higher education, although funding through PADES can be used to establish or further develop these functions. CONACyT provided funding over three years through the GeT-In programme to train staff in engagement and technology transfer offices, but the programme had limited coverage and ceased in 2016.

CONACyT provides funding for higher education institutions to undertake research in collaboration with companies. The Innovation Stimuli Programme (*Programa de Estímulos a la Innovación*, PEI), for example, has three funding strands: technological innovation for micro firms and small and medium-sized enterprises (SMEs) (INNOVAPYME); technological innovation in large companies (INNOVATEC); and innovation networks of companies and at least two higher education institutions (PROINNOVA). PEI helps to establish research partnerships, which often are a precursor to collaboration in education (e.g. joint design and delivery of programmes or work-based learning).

An evaluation of existing engagement offices is necessary to determine their effectiveness. This process could help identify good practices that could be spread more broadly across the higher education system. Targeted funding could be used to help build organisational capacity through training for staff working in engagement offices and to strengthen peer learning across the higher education system through the establishment of a national network.

Ensuring a diverse offer of programmes

A diverse offering of study programmes by field and level of study across the higher education system and the country helps align higher education with current labour market needs. It can also shape future developments by enabling or encouraging certain kinds of economic activity. However, the Mexican higher education system currently lacks such diversity.

Over one-third of the enrolment in bachelor's and postgraduate programmes is concentrated in one field of study: law and business administration (OECD, 2018_[16]). The high and constant demand to enrol in these programmes reflects the preferences of students and their families, even when over-qualification in the labour market for these graduates is high (56%) (INEGI-ENOE, 2017_[17]). However, students and their families may not have the necessary information to make an informed choice when selecting these programmes as there are significant information gaps on the labour market outcomes of study programmes in Mexico. Higher education institutions have responded to this demand by expanding the delivery of these study programmes. This expansion is further stimulated by the low cost of provision for these programmes.

Emerging labour market needs, particularly in some of Mexico's strategic industries (energy, automobile and aerospace), are demanding more graduates from short-cycle tertiary education programmes with technical aptitude and practice orientation, as well as more specialised knowledge and skills delivered through master's programmes.

In general, short-cycle tertiary education programmes are practically based and occupationally specific programmes designed to provide students with professional knowledge, skills and competencies. Prospective students in Mexico, and their families, generally consider these programmes to be inferior to and less prestigious than bachelor's programmes. This view is currently supported by the poorer labour market outcomes of short-cycle tertiary education programmes that have a lower chance of leading to

employment (OECD, 2018_[16]) and much higher rates of informal employment and over-qualification compared to bachelor's degree programmes (INEGI-ENOE, 2017_[17]) (see Chapter 4).

Labour market outcomes for short-cycle tertiary education programmes may, however, improve due to the increasing demand by Mexican employers for these graduates. According to a recent survey, seven of the top ten positions most difficult to fill by employers in Mexico are offered as short-cycle tertiary education programmes (Manpower Group, 2017_[18]). There are already signs of a supply side response to this, with the share of first-time graduates from short-cycle tertiary education programmes increasing from 6.7% in 2005 to 8.1% in 2016 (OECD, 2018_[16]).

Enrolment in postgraduate programmes is still low in Mexico. In 2016-17, around 6% of students were enrolled in master's programmes and 1% in doctoral programmes (SEP, 2017_[19]). 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_[16]). Although, as employers commented to the OECD review team, graduates from business administration and law can be hired for a wide range of occupations, the current enrolment pattern by field of study is not well aligned with the need for specialised knowledge and skills in the strategic sectors of Mexico's economy, which will require more advanced level skills in certain STEM (science, technology, mathematics, engineering) fields of study.

To facilitate labour market entry for young researchers, and to improve the innovation activity and competitiveness of firms, CONACyT offers scholarships for recent graduates from postgraduate programmes to work in a company. Over a period of 12 months, graduates receive a monthly allowance of MXN 10 000 (USD 500) as a master's graduate, and MXN 15 000 (USD 750) as a doctoral degree holder. The hiring firm needs to match the scholarship amount to complement the graduate's salary. Micro and small firms contribute half the amount of the scholarship towards the salary of the employed graduates.

A key barrier to a greater diversity of study programmes in Mexico is the nature of public funding for higher education. The government provides a block grant to public higher education institutions to support the delivery of programmes based on student numbers and historical trends. Unlike many other countries, Mexico does not make use of formula-based funding with weightings for different fields and levels of study. This greatly limits the steering role of public policy. Therefore, higher education institutions in Mexico tend to deliver programmes that are likely to attract high enrolments and that are less costly to deliver in terms of staff and infrastructure. As a result, close to half (47%) of all offered programmes are in social sciences, administration and law, and over 70% are at the undergraduate level (ANUIES, 2018_[20]).

The funding model also restricts the government's ability to ensure that a diverse range of programmes by level of study is delivered in public higher education institutions. The vast majority (97.5%) of students in short-cycle tertiary education programmes are in public institutions. By contrast, the proportion of students in public higher education institutions undertaking master's (39.7%) or doctoral (59.1%) programmes is lower and rapidly decreasing (OECD, 2018_[16]). The increasing concentration of postgraduate programmes in private higher education institutions, and the potentially high fees for these programmes, could discourage qualified candidates from pursuing postgraduate studies. This could be addressed by changing the funding allocation model to encourage more enrolments at the master's and doctoral level in public higher education institutions.

Greater alignment between programmes and labour market needs in the private subsystems could be achieved through a stronger and more consistent anchoring of labour market relevance and outcomes in programme accreditation, as discussed above.

CONACyT supports postgraduate programmes in public and private institutions listed in the PNPC through scholarships, and 6% of postgraduate students (around 23 000) receive a CONACyT scholarship. Around two-thirds of the programmes listed in the PNPC are in STEM fields of study, some of which have associated labour market shortages. The scholarships increase the attractiveness of these programmes and the number of applicants, which allow institutions to choose from a wider pool of candidates. This, in turn, increases the quality of students accepted. Currently, 36 postgraduate programmes listed in the PNPC are organised in closed collaboration with industry (*Programa de Posgrados con la Industria*). All of these programmes are in engineering, with the exception of one in journalism.

Scholarship-based funding mechanisms could also work in the case of short-cycle tertiary education programmes. However, the status of these programmes needs to be raised first, for example through an information campaign to make them more attractive to students, higher education institutions and employers. Nevertheless, the government should closely monitor the labour market outcomes from these programmes and ensure that they are delivering the skills needed in the labour market.

To increase the diversity of fields and levels of study, the government could introduce a new allocative mechanism for block grants for public higher education institutions using funding formulas and weightings to steer the delivery of programmes better aligned with the labour market.

Changing labour markets also require graduates who bring skills from different disciplines and can make connections between ideas and concepts across fields of study. However, interdisciplinary programmes in Mexico are very difficult to accredit under current arrangements. Despite recent efforts by institutions to introduce more interdisciplinary programmes, accreditation agencies are discipline specific, and the programmes require accreditation from multiple agencies, which increases the regulatory burden and delivery costs. In addition, the higher education system and the labour market heavily rely on occupations and related professional licenses, meaning that students are trained for specific jobs. Currently, there are no professional licenses to recognise the mix of two or more disciplines, so the government will need to remove barriers related to the accreditation of these programmes and the award of professional licenses.

Helping students succeed in higher education and the labour market

Fostering innovative learning and teaching practices in higher education

Mexican higher education institutions rely heavily on lecture-based teaching, and innovative student-centred methods are uncommon. The government made a first step to change this by introducing a competency-based approach in the three technological subsystems (Lozano Rosales, Castillo Santos and Cerecedo Mercado, 2012_[21]). This, and other innovative approaches to learning and teaching, could be developed further and expanded across all subsystems if the following three barriers, currently inherent to all subsystems, are effectively addressed.

First, the quality and impact of teaching is not encouraged, recognised or rewarded. The National System of Researchers (*Sistema Nacional de Investigadores*, SNI), established

in 1984, classify academic staff in public and private higher education institutions in three levels and award supplementary remuneration to those in the highest one, according to their performance in three areas: research quality, knowledge transfer and commercialisation of research results, and contribution to education. Contribution to education is measured via quantity rather than quality. Performance in teaching is measured by the overall number of teaching hours, and the hours of teaching in bachelor's programmes by members in the top two SNI levels. The latter indicator is commendable, as it connects research with learning, exposes students to academic excellence and encourages some to pursue a career as a researcher. However, it does not encourage the development of high-quality teaching skills and the use of innovative teaching methods, which calls for different indicators to encourage and measure the quality of teaching in higher education.

Second, there is no systematic professional development and teacher training in higher education. As in many countries, academic staff are hired as experts in their field without prior instruction in pedagogy. PRODEP (previously called PROMEP) has financed projects to improve the quality of teaching since 1996, but the emphasis has been on funding postgraduate studies for full-time academic staff to raise their qualification levels. An evaluation of the funding period 1996-2013 showed that the programme improved the qualification of full-time academic staff in public state universities, and to a certain extent academic performance. Nonetheless, the programme did not meet its goals as the government lacked sufficient control on how funding was applied, and some institutions spent the funding on different purposes (Guzmán-Acuña and Martínez-Arcos, 2015^[22]). Moreover, 71% of academic staff are employed on a casual basis and do not benefit from PRODEP funding, even though they can teach up to 40 hours a week. The one-year financial planning horizon for public higher education institutions is a key trigger for these staffing arrangements. As a result, it is difficult to ensure the quality of education at the system level, which undermines the potential reach of this policy lever.

Third, there is not sufficient awareness of the fundamental role good teaching plays in helping students to develop labour market relevant skills in Mexico. Research and outcome assessments on effective learning and teaching practices and innovative ways of learning is predominantly undertaken by a small number of individual researchers, and there are no effective mechanisms in place to disseminate this information across the system. ANUIES and FIMPES encourage high-quality teaching among their member institutions with best practice awards, but their reach is limited to less than 8% of higher education institutions in Mexico.

The lack of information on the student experience in higher education, and how it relates to their labour market outcomes, also contributes to the limited awareness of the importance of learning and teaching in higher education.

The reach of policy levers to encourage the practice of innovative learning and teaching is limited. Targeted funding programmes, such as PRODEP, do not reach private higher education institutions and only a small share of academic staff in public institutions. SNI, which includes full-time academic staff in both public and private higher education institutions, is one of the few policy levers that can potentially reach all subsystems. Quality assurance mechanisms, which have a wider but not complete reach across the system, do not measure or assess the quality and impact of teaching.

The government should encourage higher education associations and institutions to offer teacher training and ongoing professional development to all academic staff, including casual academic staff. The use of digital technology could facilitate the reach of these

initiatives across all subsystems, for example with an online course on pedagogy and innovative teaching methods that complement in-person training. While the proportion of academic staff with postgraduate qualifications needs to increase to ensure the delivery of more advanced skills in higher education, more emphasis is needed on encouraging and supporting a strong culture of excellence in learning and teaching.

The increased attention on the importance of good teaching for the development of labour market relevant skills is likely to spur more research on effective learning and teaching practices and to develop the evidence base that could facilitate the evaluation of current practices in Mexico. More research will also help raise attention of the issue. An online platform could facilitate the collection and dissemination of good practices nationally and internationally and become a source of knowledge and experience that academic staff can draw on and apply in their practice. It is important that current research, which is carried out by only a few individuals, is brought to the next level by facilitating peer exchange and policy learning. This could be aided by a national teaching excellence award programme.

An effective mechanism to encourage a culture of excellence in learning and teaching is to establish a Centre for Excellence in Learning and Teaching with outreach across all subsystems and states. The centre could undertake some of the actions mentioned in this section and provide support for higher education institutions to implement the initiatives and share good practices. Two examples of national approaches from Australia and Ireland are presented in Box 6.2.

Box 6.2. National approaches to enhance excellence in learning and teaching in Australia and Ireland

The **Australian** government promotes and supports the enhancement of learning and teaching in eligible higher education institutions through the Australian Awards for University Teaching. This builds on more than two decades of successful Australian government initiatives to support the enhancement of learning and teaching in Australian universities by creating a culture of collaboration and engagement. From 2011 to 2016, the Office for Learning and Teaching (OLT) supported collaboration and good practice sharing, professional development for academic staff, grants for research projects and fellowships to reward excellence in teaching. Since 2016, the Awards for University Teaching continued under the administration of the federal Department of Education and Training. From 2018, the awards are being led by Universities Australia, the main body representing the country's university sector.

The five annual award categories that recognise teaching excellence and outstanding contributions to student learning are: 1) awards for programmes that enhance learning; 2) awards for teaching excellence; 3) award for the Australian University Teacher of the Year; 4) career achievement award; and 5) citations for outstanding contributions to student learning.

Success in the Awards for University Teaching and in OLT (and its successors) grants and initiatives has become a hiring and promotion criteria in Australian universities. Initiatives that have gained awards and grants have been replicated widely across universities. For instance, research on the first year experience in higher education and the identification of good practice has been translated into initiatives on reducing attrition across the higher education system.

All learning and teaching material from government-funded programmes is documented in an online platform, the Teaching and Learning Repository, which is available to the public (<https://ltr.edu.au/>) and supported by Universities Australia.

In **Ireland**, the National Forum for the Enhancement of Teaching and Learning was launched in 2012 with the aim of enhancing teaching and learning for all students in higher education. The forum serves as a platform to mobilise expertise and share best practice across the higher education system in Ireland. It plays a key role in the National Strategy for Higher Education 2030. The forum is funded by the Higher Education Authority, which is the public agency responsible for higher education funding, strategic planning and policy development.

The National Forum concentrates its work in five main areas: 1) professional development; 2) learning impact awards; 3) research in teaching and learning; 4) building digital capacity; and 5) partnership and collaboration. The National Forum created the Digital Roadmap to inform and guide senior managers of higher education institutions to enhance teaching and learning by building digital capacity. In 2017, a review of the programme evaluated the relevance, efficiency, effectiveness, impact and sustainability of the National Forum, with an overall positive assessment. The review recommended the conversion of the forum from a programme into a permanent organisation with clear objectives and streamlined activities to achieve a system-wide impact and to set the bar for excellence in higher education teaching and learning. The National Forum has an online repository, which is fully available to the public on its website (www.teachingandlearning.ie/).

Source: For the Australian Awards for University Teaching (Australian Government, 2018_[23]), for the Office for Learning and Teaching (Gardner, 2016_[24]), and for the National Forum for the Enhancement of Teaching and Learning (National Forum for the Enhancement of Teaching and Learning in Higher Education, 2018_[25]) and (Henan, 2017_[26]).

The integration of experienced industry professionals, whose primary job is in a discipline-related occupation, as full academic staff by awarding the title of “professors of practice” could be an effective way of embedding real-world experience into the classroom, particularly in the technological subsystems. The Netherlands introduced this approach around 15 years ago in their professional higher education institutions (*hoger beroepsonderwijs* institutions, formerly *hogescholen*) by introducing “lectors” who work part-time in the institution and part-time in industry. The role of lectors is to increase the applied research activities of professional higher education institutions and to ensure the labour market relevance of education activities. The government funds approximately 70% of the lector’s salary via the institution’s core budget, with the rest funded by external partners. It is important that lectors are properly integrated into the department and that they receive training to ensure and raise the quality of teaching (OECD/EU, 2018_[27]).

International experiences and an internationalisation of the curriculum allow students to develop a specific set of knowledge and skills that are highly relevant for future careers in Mexico and abroad. As discussed in Chapter 5, outward and inward student mobility is currently very low, the majority of programmes are not internationally oriented, and very few institutions offer programmes taught in English. Mobility within the country could have a similar effect on student skills due to the richness of Mexico in terms of culture, resources and industrial specialisation, but this is also low.

Unlike many other OECD countries, the federal government does not have an international education strategy for higher education, or a dedicated agency. This leaves higher education at a system level largely disconnected from international developments in student mobility. The small role of government in promoting internationalisation activities in higher education is confined to a number of governmental bilateral and multilateral agreements that facilitate institutional level partnerships, and participation in international programmes, such as the Erasmus+ programme (European Commission, 2018_[28]). Therefore, the internationalisation activities of institutions are largely based on bilateral agreements with partner institutions abroad.

Internationalisation in higher education is also disconnected from other internationalisation initiatives that aim to strengthen the country's position in global value chains. For instance, the Mexican internationalisation agency, ProMexico, appears to operate without connections with higher education institutions. This is a missed opportunity to use highly skilled human capital to attract foreign investment in high-tech industries and increase the sophistication of exports.

The National Co-ordination of Higher Education Scholarships (*Coordinación Nacional de Becas de Educación Superior*, CNBES) provides scholarships to support the mobility of undergraduate students nationally and internationally. For postgraduate students, CONACyT provides almost 3 000 scholarships annually to study abroad (*becas para el extranjero*), prioritising studies in the areas of PECiTI (the Special Programme of Science, Technology and Innovation), particularly STEM. Students in other fields have fewer opportunities to study abroad. Scholarships cover a monthly allowance, insurance and programme tuition fees for 12 months (*especialidad*), 24 months (master's) or 36 months (doctoral studies). Stakeholders reported to the OECD review team that a key barrier to a wider take up of these scholarships is that students lack information, and scholarships are often insufficient to cover all costs, meaning that students who wish to study abroad need to have a substantial amount of additional sources of financing.

Further efforts to support student and staff mobility and to internationalise the curriculum would greatly benefit from a national strategy to improve and promote internationalisation in higher education. This would facilitate greater collaboration across the system and help to build synergies at the institutional level between internationalisation, initiatives to enhance labour market relevance and outcomes, and other (competing) priorities. A strategy would also help to target funding and scholarships to increase the inward and outward mobility of students and staff. Activities to internationalise the curriculum should be considered an integral part of innovative learning and teaching.

Integrating work-based learning into the curriculum

Work-based learning can be one of the most effective ways for students to develop work-relevant technical and professional skills, including transversal skills. As discussed in Chapter 5, the extent to which students are exposed to work-based learning, and the quality of activities, varies across subsystems, and the lack of professional experience is one of the most cited reasons why Mexican employers do not hire young graduates. Work-based learning in Mexico is undertaken mostly through internships, the social service, dual education programmes and postgraduate programmes with industry.

The organisation of 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. In light of this, it is commendable that internships are

compulsory in over half of higher education institutions (ANUIES, 2017^[5]), including all institutions in the three technological subsystems. CNBES offers scholarships to undertake internships for students during their last two years of a bachelor's programme or during the last two semesters of a short-cycle tertiary education programme.

Some higher education institutions, particularly larger institutions, have career offices (*oficinas de prácticas*) to co-ordinate student participation in internships and social service. However, these offices are often understaffed and not well connected with companies and organisations potentially hosting internships, which makes it difficult to provide comprehensive preparation and guidance for students and host organisations.

In many countries, students undertaking an internship are under some form of labour regulation, which gives them some of the rights and protections that employees have, such as health and safety protections covering insurance against work-related injuries (Stewart et al., 2018^[29]). However, as noted in Chapter 5, internships in Mexico are not regulated by the labour law. There is no specific form of contract used for internships or the social service, and it is not clear if students have adequate insurance while on internships. This leaves students, their families, employers and higher education institutions in a highly unclear situation concerning responsibilities and liability.

ANUIES drove the creation of the Higher Education-Industry Foundation (*Fundación Educación Superior-Empresa*, FESE) to facilitate the placement of students in companies and to standardise processes. FESE introduced a standard contract and insurance policy for internships. Students could access more companies, and companies were more willing to take students for internships. Stakeholders advised the OECD review team that FESE was very effective, particularly for students in smaller higher education institutions that lack internal resources. The SEP funded FESE's operations as a central platform from 2008 to 2014. A reactivation of the role of FESE as a central platform would help to ensure that more students across all subsystems and states can benefit from effectively and efficiently organised work-based learning.

Mexico is one of the few countries³ worldwide where every student enrolled in higher education is required to complete a period of 480 hours social service (*servicio social*), which is intended to allow students to give back to society (Canton, 2011^[30]). By working in non-government organisations, public education institutions, government and companies with a corporate social responsibility programme, students are expected to apply the discipline-specific knowledge and skills they have developed in their programmes, thereby further developing a broad range of transversal skills. Completing social service is mandatory to receiving the professional license.

Legislation concerning the social service is unclear, fragmented and contradictory, leading to overregulation, confusion and contradictions. This causes tensions among higher education institutions and state and federal governments, as well as with the Secretariat of Health (*Secretaría de Salud*) for health programmes. It also hinders the effectiveness of the social service and limits the extent to which it benefits society (José and Ramírez, 2012^[31]).

The Constitution of Mexico (1917, Article 5) gives state governments the power to determine which professions require a professional licence, the conditions for obtaining

³ Colombia, Venezuela and Peru adopted the Mexican practice in 1958 (Canton, 2011^[30]).

the licence, and the issuing authorities in each state. Based on this, each state is expected to create an act based on Constitutional Article 5 (*Ley Reglamentaria del Artículo 5º Constitucional*) that details the licensing and practice of professions. In addition, the Education Act (1993, Article 24) establishes that the social service is a compulsory prerequisite for the professional license and that it should be executed according to the provisions of that law. However, these provisions have never been created.

State acts regarding the professional licence should include the conditions of the social service. However, few states have created this act, there is no consistency among the acts, and some do not provide sufficient information on the social service. The state acts are often outdated and several have been repealed. Some contradict laws of higher rank, for example, by stating that social service cannot be paid. The state act for Mexico City was designed to be applied across the whole country, in contradiction with the Constitution. The Mexico City Act also established the role of the General Directorate of Professions and professional associations. This arrangement foresees that graduates should provide a report on their professional experience every three years to a professional association.

The case for the social services in health programmes is even more complex. In 1982, the Secretariat of Health issued its own regulation (Health Code and Regulation of Social Service for Higher Education Students) that established a National Social Service Programme for Health Professionals and enforced its application in all national higher education institutions that use the Secretariat of Health to host the social service of their health students. The Health General Act (1984) also stipulates that health authorities must establish the conditions in which the social service should be performed and coordinating mechanisms with education authorities to increase efficacy.

In addition, the SEP has designed the social service regulation for each of the direct-provision subsystems and private higher education institutions and autonomous universities have created their own internal regulations for the social service.

Social service is a commendable practice to engage students to build social responsibility. It helps to develop a wide range of transversal skills, but it needs strengthening. The first task will be to harmonise current conflicting regulations and to develop common guidelines for all fields of study that connect the discipline-specific skills that students bring with them and the transversal skills that they will gain during social service. The provisions of the Education Act regarding the social service must be created, integrated and systematised in a single document. This will require a consensus of the different levels of government that currently regulate this topic, as well as a commitment to coordinate, promote, structure and monitor the execution of the social service to ensure that it is based on uniform, equitable and fair principles, and ultimately benefit society.

Furthermore, closer collaboration and improved communication are needed between higher education institutions and professional associations on work-based learning in general, and social service in particular. Students and employers need more clarity about the benefits of social service and its positive effects for the development of transversal skills. Higher education institutions need to give greater recognition to social service as a potentially very effective form of innovative learning and teaching (Canton, 2011_[30]).

Dual education programmes have been recently introduced in some Mexican higher education institutions, mainly in the technological subsystems (see Chapter 5). However, there is still little awareness among higher education institutions, students and companies of the existing dual education programmes and their potential benefits. Building awareness and raising interest will take time and requires the use of policy levers, as a

recent OECD/EU report on Hungary shows (OECD/EU, 2017_[32]). The Hungarian Ministry of Education organised a large-scale information campaign and provided funding to start dual education programmes at bachelor's level in 19 institutions. The dual programmes include 20-24 weeks work-based learning in a company per academic year. Students have a higher workload compared to their peers who follow a standard programme in the same field. Students apply for a dual programme through the central entrance exam or based on their final exam points in secondary school. They have to apply with one of the programme partner companies, who generally use several recruitment channels, such as roadshows, exhibitions, or secondary school visits. Companies select students according to their own requirements based on a personal interview.

Since the scarcity of resources and the lack of long-term planning in many Mexican companies is reported to be a barrier to dual education, it will be important for the government to undertake a thorough evaluation of the effectiveness, enabling factors and obstacles of the current dual education programmes and to communicate the findings widely among companies, higher education institutions and the wider public. FESE and CONOCER, the National Council for Normalisation and Certification of Labour Skills (*Consejo Nacional de Normalización y Certificación de Competencias Laborales*), are currently developing a proposal commissioned by the SEP to implement dual education programmes in the technological subsystems.

At the postgraduate level, CONACyT provides scholarships for industrial postgraduate programmes. However, demand for these programmes has been low so far. From 2013 to 2017, 1 481 students were enrolled in these programmes, of which approximately one-third (409) were already working in the company when they enrolled. As with dual education programmes, the government needs to raise awareness, which requires evaluating existing programmes.

Strengthening entrepreneurship support in higher education

High-technology entrepreneurship could move the Mexican economy upwards in global value chains and help to address social needs. In the current situation, a share of highly qualified graduates have difficulty finding jobs that are adequate for their level of qualification. For these young people, who are not making full use of the knowledge and skills acquired in higher education, starting a business can be a viable career option.

Higher education can play an important role in supporting students and graduates to become successful entrepreneurs (OECD, 2017_[33]). The focus of higher education in Mexico is on educating for specific professions, while supporting entrepreneurship is not widespread practice. Nevertheless, there are some good examples of entrepreneurship support in higher education institutions across subsystems (see Chapter 5).

Entrepreneurship among young higher education graduates is growing. The fields of study with the highest rates of entrepreneurs are arts and humanities, agriculture, and engineering (INEGI-ENOE, 2017_[17]), which may reflect the difficulties some of these graduates have in finding a suitable job (UVM, 2018_[34]). A key barrier for these entrepreneurs and their start-up companies is that entrepreneurship support in higher education institutions is not well connected with other business support organisations, and start-up companies are often not connected with each other. This is a missed opportunity, as a well-developed start-up environment can help new companies to grow and participate in global value chains (OECD, 2017_[35]).

Public policy can help to better connect entrepreneurship support offered by higher education institutions with the emerging knowledge-based start-up environment in Mexico. INADEM, the National Institute for Entrepreneurship, was created in 2013 as a decentralised public agency of the Secretariat of Economy (*Secretaría de Economía*, SE) to design and implement support programmes for entrepreneurs and micro- and SMEs, including start-ups established within higher education institutions. INADEM also supports higher education institutions directly by funding incubators (basic and high-tech) and accelerators. It also awards prizes for entrepreneurial students and entrepreneurial education institutions at all levels.

Although there is some collaboration with higher education institutions, current links need to be strengthened. The Netherlands provides an interesting example of how to coordinate efforts in a very dense system. This could be particularly relevant for Mexico City, Jalisco and Nuevo León, where more than 60% of incubators are located (Box 6.3).

Box 6.3. StartupDelta in the Netherlands

StartupDelta is an independent public-private partnership that brings together all ecosystems in the Netherlands to one single hub to help start-ups grow. It is supported by the Ministry of Economic Affairs and the Ministry of Education Culture and Science.

The aim of the partnership is to break down barriers and improve access to talent, capital, networks, knowledge and markets. Key activities of StartupDelta focus on opening up public procurement to start-ups by establishing a coalition of government departments and municipalities, collaborating in a testlab, and experimenting with new business models.

StartupDelta also attracts and supports foreign start-ups to the Netherlands through the Orange Carpet programme, which outlines seven simple steps for foreign start-ups to ensure a smooth start in the Netherlands. It also provides a single point of entry and a support portal for foreign start-ups.

StartupDelta regularly organises visits for people providing start-up support to global hubs and network events, such as WebSummit, Slush, SouthbySouthWest, Hannover Messe, and globally known ecosystems, such as Silicon Valley, Tel Aviv, Berlin, London, and promising destinations for Dutch start-ups in China and South Korea.

Efforts are underway to create a community of proactive “start-up diplomats” at embassies and consulates in priority countries to raise the profile of StartupDelta in the global embassy network of the Netherlands.

Source: (OECD/EU, 2018_[27]).

The government can support entrepreneurship by helping higher education institutions connect with INADEM and other actors in the local, regional and entrepreneurship ecosystems. Encouraging higher education institutions to integrate entrepreneurship education into the curriculum across a wider range of programmes would help students interested in entrepreneurship to develop the knowledge and skills they need to start and successfully run a business. This could be done through the recommended Centre for Excellence in Learning and Teaching.

Ensuring better pathways into and across the higher education system

Effective pathways are needed into and across higher education to ensure that Mexico maximises the talents of its people. The current higher education system has restricted options for entry to higher education and prevents mobility between levels of study and between institutions and programmes.

The structure of upper secondary education is a key barrier to higher education as students from the vocational strand are not able to access higher education and there is no post-secondary non-tertiary education (ISCED 4), which can act as a bridge between upper secondary and higher education. The lack of alternative pathways prevents these graduates from entering higher education at a later stage in their life.

The current system prevents pathways between short-cycle tertiary education programmes (ISCED 5) to bachelor's programmes (ISCED 6). Short-cycle tertiary education programmes can be an important building block for a bachelor's degree. Some students may feel that pursuing a four or five year bachelor's degree is not the right path for them at a certain point in time, but they may feel ready after a period of study or time in the labour market. Enabling the articulation of programmes and the seamless transfer of credits can reduce the time needed to achieve a bachelor's qualification and increase the skill levels of graduates.

Pathways and credit transfers have been important ways of raising higher education attainment in the United States. Short-cycle tertiary education programmes had entry rates of 37% in 2016, the third highest rate across OECD countries after Chile and Turkey, and close to three times the OECD average (OECD, 2018_[16]). Flexible pathways exist because credit accumulation and transfer between institutions is a common established practice. Students who start a two-year programme at a local college or community college and gain an associate degree or equivalent credits can then transfer to a university for a bachelor's degree. On average, around half of graduates from bachelor's programmes had previously enrolled in a two-year degree programme (Simone, 2014_[36]). To increase success rates of transfer students, more efforts have recently been put into partnerships between colleges and universities (Xu et al., 2017_[37]).

Prospective students in Mexico face difficulties in having prior learning outside higher education and qualifications gained abroad recognised for entry to higher education. The Secretarial Agreement 286 regulates the recognition of prior learning, and a number of higher education institutions are authorised to act as assessment agencies. These institutions can impose examinations to assess the knowledge and skills previously acquired. Procedures for the recognition of prior learning used to be complex and slow as applications were dealt with on a case-by-case basis. Some improvements were made in 2017, and it will be important for the government to evaluate these recent reforms and identify how the recognition of prior learning can be further improved.

The current system also prevents pathways between the two master's programmes (ISCED 7), the master's one-year specialisation programme (*especialización*) and the two-year master's (*maestría*). One-year specialisation programmes are generally more practice-oriented, whereas two-year master's programmes are more research-oriented. Students who graduate from a specialisation programme and are interested in pursuing a research career should be able to undertake research-oriented courses and continue in the two-year master's programme, and eventually perhaps a doctoral programme.

The poor uptake of the Mexican National Qualifications Framework and the lack of a common credit recognition scheme hinder flexibility and effective pathways. As in many

countries, students must make requests to change between study programmes or higher education institutions directly to the institutions, and their applications are assessed on a case-by-case basis. However, in the absence of an effective national qualifications framework or established credit recognition scheme, decisions by academic staff are hampered by the lack of understanding regarding how credits obtained in another programme or institution relate to the programmes in their institution. To facilitate student mobility within and between the subsystems, the government introduced a common credit system (*espacio superior de educación tecnológica*) in three technological subsystems in 2009. Although this brought some improvement, implementation has been difficult and incomplete because of incompatibility of curricula, work-based learning and other requirements.

Migration to the United States for higher education is common. To support Mexican higher education students who return to Mexico before graduation, the SEP, in collaboration with ANUIES, introduced PUENTES, the National Emergent University Programme to Finish Higher Education (*Programa Universitario Emergente Nacional para la terminación de estudios superiores*), in 2017. PUENTES offers the possibility to complete studies in around 400 Mexican higher education institutions, but only 35 students participated in 2017.

The lack of a common credit recognition scheme also limits options for students in bachelor's programme who would prefer to change to a short-cycle tertiary education programme in the same field of study. Some of these students may be struggling with the requirements of a bachelor's programme and could be at risk of dropping out of higher education without a qualification. However, they cannot use the credits gained through the bachelor's programme in a short-cycle tertiary education programme. Stakeholders informed the OECD review team that this could affect up to half of the cohort in certain bachelor's programmes.

The government should ensure that the National Qualifications Framework is used more effectively to facilitate pathways into and within higher education, including through the recognition of prior learning. This will require the establishment of a comprehensive credit recognition scheme aligned with the National Qualifications Framework. In addition, the government could enable pathways between levels of study by recognising the completion of short-cycle programmes as a potential entry path for bachelor's programmes, and by recognising the completion of the master's specialisation programme (*especialización*) as a potential entry path for the master's programme (*maestría*).

Fostering the role of higher education institutions in lifelong learning

Higher education has an important role to play in lifelong learning by providing flexible learning environments for adults throughout their working lives. With over 45 million people (83% of the Mexican workforce) who have only completed upper secondary or lower levels of education, there is an urgent need for training to upskill and reskill the labour force. However, lifelong learning is poorly developed in Mexico, and there is no strategy to encourage its provision in higher education institutions or boost participation.

Higher education institutions do not provide the flexibility that allows students to exit and return to higher education at a later stage in life to either complete or continue studies at an advanced level. The provision of higher education is largely tailored for the young, full-time student on campus, making it difficult for people to combine studies with work. Data on part-time study programmes is not available for Mexico, but across OECD countries, on average 20% of enrolment in higher education in 2016 was part-time

(OECD, 2018^[16]). Higher education institutions need to be encouraged and supported to deliver more flexible study programmes, including part-time provision.

Distance and online education can help to address these issues, and there are currently around 15% of students enrolled in distance or online education. In 2012, the SEP established the Open University of Distance and Online Education (*Universidad Abierta y a Distancia de Mexico*, UNaDM) to expand the provision of higher education through distance and online learning. However, quality assurance agencies have been slow in adapting to the increase in this form of learning and teaching and need to develop clear evaluation processes and criteria to assess the quality of, and accredit, online programmes.

As noted in Chapter 5, continuing education can provide the broader public with an opportunity to access higher education without enrolling in a full degree programme. These short courses can provide important training for current skills needs or prepare students for higher education, and therefore provide alternative pathways for entry to study programmes. Over 110 higher education institutions, particularly in the three technological subsystems, deliver continuing education activities in collaboration with CONOCER. These higher education institutions act as authorised certifiers for CONOCER and deliver short courses to prepare people with any level of education to take an exam that certifies their occupation-specific knowledge and skills, or transversal skills. In 2017, 41% of certifications were awarded to higher education graduates, and 70% were for ICT skills. The government should encourage ongoing collaboration between higher education institutions and CONOCER.

However, neither graduates nor companies consider higher education institutions for further training. Mexican companies do not have a culture of training; large companies provide more training than smaller ones, but they only employ 11% of the workforce (INEGI-ENAPROCE, 2015^[38]). Firms that are active in upskilling their workforce prefer to offer training internally or to collaborate with private training providers (World Economic Forum, 2018^[39]), which limits the role of higher education institutions. With an average graduation age from a bachelor's programme of 25 years, and low enrolment rates in postgraduate programmes, there is no tradition of continuing higher education during later stages of a professional career. Unlike in other OECD countries, there are no policy levers to encourage the participation of older learners in higher education. The importance of continuing education and training needs to be highlighted as part of the strategy to enhance the labour market relevance and outcomes of higher education in Mexico.

Working together effectively to enhance labour market relevance and outcomes

The governance structure of higher education in Mexico is complex, with federal and state governments and multiple agencies involved in various functions (see Chapter 3). Independent agencies with specific functions can provide focused attention on some specific aspects, but the creation of too many agencies can lead to co-ordination problems, overlapping roles and responsibilities, additional administrative resources, and institutional rivalries.

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

The availability of up-to-date, representative and system-wide data and information on higher education and the labour market outcomes of graduates is limited in Mexico. Several secretariats and agencies collect this information, but there is no co-ordination between organisations, reducing the comparability, effectiveness and accessibility of the information.

The National Statistics Agency (INEGI) produces a quarterly well-developed national labour force survey (*Encuesta Nacional de Ocupación y Empleo, ENOE*) to provide comprehensive and timely labour market information. Data is publicly available, but specific information on the labour market outcomes of higher education graduates is not published on the INEGI website or in publications. In 2012, The Secretariat of Labour and Social Welfare (*Secretaría del Trabajo y Previsión Social, STPS*) launched the labour market observatory (*Observatorio Laboral*), which is the only initiative that currently provides information on the labour market outcomes of higher education graduates. Data is published on the website and in an annual publication. There is no foresight work that provides projections that forecast labour market needs in Mexico to help governments, institutions, students and employers plan ahead.

There is a range of data and information available on higher education, but most is basic statistical data with no information on the student experience of higher education or their outcomes in further study or the labour market (Table 6.3).

Articles 70 and 75 of the Transparency and Public Governmental Information Access Act (*Ley de Transparencia y Acceso a la Información Pública Gubernamental, 2015*) require autonomous universities to report periodically to the federal and state governments, and the community more broadly, on their study programmes, administrative procedures, scholarships, vacancies, academic staff salaries and assessment results.

In addition, the SEP asks all higher education institutions to provide basic institutional and enrolment data to ANUIES. Higher education institutions in direct-provision subsystems are required to provide data to their co-ordinating agencies within the SEP. However, requirements do not include reporting data on labour market outcomes.

The provision of basic and up-to-date information to the SEP is a condition for public higher education institutions to receive funding through targeted funding programmes. Some programmes require additional information, for example, institutions applying for funding under the Programme to Strengthen the Quality of Education (*Programa Fortalecimiento de la Calidad Educativa, PFCE*) need to report additional information, such as:

- The proportion of programmes assessed as level one programmes by CIIES or accredited by COPAES.
- The proportion of programmes developed on the basis of feasibility studies.
- The share of programmes with competency-based learning.
- The share of programmes with mandatory internships.
- The results of the indicator to measure the academic performance per programme (*Indicador Desempeño Académico por Programa, IDAP*) based on the result of the EGEL test (if available).

The federal government publishes statistics and information on enrolment in each programme within higher education institutions, it differentiates enrolment in programmes that have a recognition of quality (e.g. RVOE, evaluation by CIEES, accreditation by COPAES, recognition by CONACyT). In addition, CNBES and CONACyT provide information about opportunities for student scholarships on their websites. The federal government also maintains a searchable registry of graduates with professional licenses, and there are several government platforms that connect students or graduates with higher education institutions and companies in different ways.

The SEP funds the TalentOS website, where students can create a personal profile with a portfolio of knowledge, skills and experiences that employers can access to search for suitable candidates. TalentOS is a commendable practice that could be further developed and strengthened in relation to transversal skills development. This would address the current difficulties that students and graduates have in communicating to employers the range of activities undertaken as part of, or in addition to, their study programmes. A comprehensive statement of all activities and certificates helps employers better understand all the skills that students and graduates bring with them.

Despite these sources of information, there are significant challenges regarding higher education and labour market information in Mexico. There are significant gaps in the information collected, for example, there is no national student experience or engagement survey that collects information on students' experiences in higher education, including their behaviour and approaches to learning, the learning and teaching practices experienced, and the support provided by institutions (OECD, 2018_[14]).

In addition, there is no national graduate survey that provides detailed information on graduate outcomes by field of study and type of institution. Although some higher education institutions make individual efforts and carry out their own surveys, they use different survey instruments and methodologies so the results cannot be aggregated or compared across the system. There is no regular national survey of employers to gather their views on the skills levels of graduates and the types of skills they are looking for in graduates.

The diverse nature of the Mexican higher education system, economy and the labour market require more granularity than current data collections deliver. The lack of coordination between different agencies involved in higher education and labour market data is one of the underlying reasons for the current use of different methodologies, and also affects the priority setting for data analysis. The labour market relevance and outcomes of higher education have not been a priority. This is exacerbated by the fact that information is fragmented and spread across over a dozen websites and various publications, some of which are not well publicised or user-friendly.

Table 6.3. Websites with information about higher education and the labour market in Mexico

Website/portal	Information	Secretariat/agency
Key Figures of the National Education System (Principales Cifras del Sistema Nacional Educativo)	Annual publication and website with information on the Mexican education system, including higher education.	SEP
National Census of Higher Education Institutions (Directorio Nacional de Instituciones de Educación Superior)	Searchable website with information on higher education institutions, campuses, schools, research centres, programmes, tenured academics and main administrative staff.	ANUIES
Annual Higher Education Statistics (Anuarios Estadísticos de Educación Superior)	Searchable website with information on higher education enrolment and graduation figures by higher education institution, programme, level, gender, state.	ANUIES
Register of programmes with a RVOE (Consulta programas educativos con RVOE)	List of programmes in private higher education institutions that have a RVOE.	SEP
Census of Quality Higher Education Programmes (Padrón Nacional de Programas Educativos de Calidad de la Educación Superior)	List of undergraduate programmes evaluated as “quality programmes” (level 1 by CIEES) or accredited by a COPAES agency.	SEP
Census of the National Programme of Quality Postgraduate Programmes (Padrón del Programa Nacional de Posgrados de Calidad)	List of postgraduate programmes recognised by CONACyT and SEP.	CONACyT
Web portal “A place for you” (Portal ‘Un lugar para ti’)	Information on the admission options to 300 public and private higher education institutions in Mexico City and surrounding states to students who undertook exams to access UNAM, IPN and UAM but were not admitted.	SEP, and others
Higher Education Scholarships (Becas Educación Superior)	Information about the key scholarships for higher education students.	SEP
Engage yourself (Vincúlate)	Information provided by the government on various activities, programmes and priority areas related to the connection between higher education, industry and the world of work activities (<i>vinculación</i>).	SEP
National Registry of Higher Education Graduates with Professional Licences (Registro Nacional de Profesionistas)	Searchable register of professional licence holders (<i>cédula profesional</i>) with information about name, university, field of study, degree and graduation year.	SEP
Mexican Labour Market Observatory (Observatorio Laboral)	Annual publication and website that provides information about the labour market outcomes of higher education graduates based on data from the Mexican Labour Force Survey (ENOE).	STPS
Talents (TalentOS)	Searchable website in which students create their personal profile and companies can search for potential job candidates and contact students directly. The website also publishes information about workshops, conferences, other events and scholarships.	SEP
Labour Market Link (Enlace Laboral)	Searchable website for CONACyT scholarship holders (current and past) that lists job vacancies for which scholarship holders can apply.	CONACyT

Note: Universidad Nacional Autónoma de México (UNAM), Instituto Politécnico Nacional (IPN), Universidad Autónoma Metropolitana (UAM), Asociación Nacional de Universidades e Instituciones de Educación Superior (ANUIES), Secretaría de Educación Pública (SEP), Secretaría del Trabajo y Previsión Social (STPS), Consejo Nacional de Ciencia y Tecnología (CONACyT)

There is not a strong culture of evaluating programmes and projects that receive targeted funding. This prevents the collection of useful information about their effectiveness and outcomes. The General Directorate of Policy Evaluation within the SEP and the National

Council for the Evaluation of Welfare Policy (*Consejo Nacional de Evaluación de la Política de Desarrollo Social*, CONEVAL) evaluate some federal government targeted funding programmes. CONEVAL uses external independent evaluators and focuses on the design of projects and outputs, but not the outcomes. CONEVAL has criticised higher education institutions for not reporting on the use of funding or providing the report in a wrong format, and suggested that the indicators established by the SEP to measure impact are not suitable. However, there are no guidelines that would help higher education institutions monitor and assess the impact of projects.

As a consequence, higher education stakeholders are often not aware of what information is available and how to access and use it for decision making. Neither higher education institutions nor employers seem to be using the information available for decision making around curriculum design, programme offer or partnerships. Students and their families do not make full use of information when choosing a programme or a higher education institution. Linking existing websites in a unique higher education and labour market portal could help to address the fragmentation of information available to (prospective) students and their families and employers.

Robust and effectively disseminated higher education and labour market information can complement and boost nearly all other policy levers that governments can use to enhance the labour market relevance and outcomes of higher education. It appears that the government is not making full use of the available information and needs to develop additional instruments to collect data that can help stakeholders improve the labour market relevance and outcomes of higher education.

More information is needed to guide student choice. Many countries use a regular national graduate survey to provide information on graduate outcomes following completion of programmes, including employment, field of employment and further education (Box 6.5). Mexico could develop a similar instrument based on the experience of 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 INEGI. For quantitative data on graduate outcomes, it will be important to link the graduate's unique professional licence number (*número de cédula profesional*) with existing labour market data, similar to the LMI for All initiative in the UK (Box 6.6). In Mexico, this will 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).

In addition, the implementation of a regular national student experience survey will help the government and higher education stakeholders 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 (Box 6.4).

Box 6.4. Student academic experience surveys in Austria and the United Kingdom

In **Austria**, the Student Social Survey (*Studierenden-Sozialerhebung*) has collected information about student academic experience on a regular basis (every 4-5 years) since the 1970s. It surveys all students at public and private higher education institutions, including universities, universities of applied sciences and university colleges of teacher

education. In 2015, 47 000 students were surveyed. Topics include their views on the admissions process, reasons for studying, financial support, healthcare and childcare, satisfaction and difficulties with programmes, future plans, internship experiences, international mobility, and language skills.

The survey is funded by the Austrian government and administered by an Austrian research institute. The most recent survey in 2015 was administered by the Institute for Advanced Studies Vienna. The advisory board for the Student Social Survey includes representatives from the Universities Austria Association, the Association of Universities of Applied Sciences in Austria, the Rectors' Conference of Austrian Universities of Education, the Conference of Austrian Private Universities, the Austrian Union of Students, the Agency for Quality Assurance and Accreditation Austria and the Austrian Science Board.

The survey provides an overview of the academic experience and living conditions of different groups of students, e.g. first-year students, students in postgraduate programmes, working students, students with children, older students, students with health impairments or foreign students. Survey results are published in the "Report on the Social Situation of Students", which is a set of topical reports and a data report. Survey results are an important source of information for higher education policy. For example, the amount of scholarships and student loans are regularly assessed based on the results of the Student Social Survey. Results are also used in the guidance service for final-year secondary school students.

The Student Academic Experience Survey (SAES) in **the United Kingdom** is conducted annually with around 15 000 full-time undergraduate students. The 2018 survey included questions related to teaching quality, feedback and learning, workload and well-being, accommodation, and students' perceptions of value for money.

The survey was designed and developed by the Higher Education Policy Institute and Advance HE, and launched in 2006. Survey respondents are drawn from the YouthSight student panel, which has over 80 000 undergraduate students (about one in twenty current UK undergraduates). Students are primarily recruited through the Universities and Colleges Admissions Services (UCAS), which invites a large number of new first-year students to join the panel every year. Data is published in an annual report, and multi-year weighted tables are freely downloadable from the website.

Source: Student Social Survey website (Institute for Advanced Studies, 2015_[40]); Student Academic Experience Survey report on results of the 2018 survey (Advance HE, 2018_[41]).

In Mexico, a regular national survey of employers to understand their views on the skills levels of graduates will help close the current information gap regarding the types of skills employers require. It will allow the government to tailor measures to address specific skills shortages, and stimulate higher education institutions to engage more with employers in the design and delivery of programmes. Since 2016, Australia has implemented a survey that links the experiences of graduates to the views of their employers. The Employer Satisfaction Survey is conducted on an annual basis and surveys over 4 000 employers. It is large enough to provide comparisons by broad fields of education, employment characteristics, occupation, demographic group and institution (QUILT Australia, 2018_[42]).

Box 6.5. National graduate surveys in Italy, Canada and the Netherlands

Italy has a long tradition of student and graduate surveys. The national Quality Assurance Agency (ANVUR) implements a biennial national student survey across the entire higher education system. The National Agency for Statistics (ISTAT) conducts research every three years that surveys graduates three years after graduation. Since 1998, this has been complemented by AlmaLaurea, a national university consortium that monitors the employment outcomes of graduates from its member universities one, three and five years after graduation. AlmaLaurea currently has 75 members and represents about 90% of students. Response rates for its most recent survey were 82% for the group that graduated one year earlier, 73% for the group that graduated three years earlier, and 69% for the group that graduated five years earlier. The total sample was 270 000 graduates. The experience of AlmaLaurea led to the creation of AlmaDiploma, which aims to link secondary schools with universities and the job market, and AlmaOrientati, which provides orientation to students in upper secondary school about the choice of higher education programmes. In addition to the surveys, AlmaLaurea is a matchmaking platform for jobs and hosts the resumes of around 2.5 million graduates.

In **Canada**, the National Graduates Survey (NGS) has been surveying the labour market outcomes of graduates three years after graduation since 1976. Statistics Canada implements the survey every five years. The 2018 edition offers, for the first time, the option of completing the survey over the telephone, assisted by a Statistics Canada interviewer. The NGS collects data about the type of employment obtained and qualification requirements, under-employment and unemployment rates of graduates, and the relationship between study programme and employment outcome and job satisfaction. The questionnaire, available in English and French, was recently simplified (completion takes 30–45 minutes) and new questions on work-based learning and entrepreneurship were added. The data is used to better understand the experiences and outcomes of graduates and to improve government programmes. The data is made available for higher education stakeholders at national, provincial and territorial levels, and researchers.

In **the Netherlands**, the Association of Universities of Applied Sciences has conducted annual surveys of recent graduates since the 1990s using the HBO Monitor. The survey data is integrated into a common Labour Market Information System (AIS), which allows users to extrapolate labour market outcomes for specific training courses, occupational groups, business types and regions for a four-year-period. The HBO Monitor is implemented by the Research Centre for Education and the Labour Market (ROA) at Maastricht University. Close to 90% of all universities of applied sciences in the Netherlands participate in the survey.

Source: AlmaLaurea website and survey reports (AlmaLaurea, 2017_[43]); Statistics Canada website and survey methodology (Statistics Canada,(n.d.)_[44]); and HBO-Monitor website (HBO-Monitor,(n.d.)_[45]).

The provision of data from a range of sources requires a comprehensive and harmonised approach across federal and state levels, and the involvement of the entire higher education system. The Mexican government will need to build on the emerging co-ordination efforts between different secretariats and agencies to standardise approaches, data collection and presentation. The establishment of a working group that brings together all of the agencies that collect information on higher education and the labour market will help to standardise data collection and analysis and create better oversight

and co-ordination that helps ensure robust, relevant, and easily accessible information. This will need a greater whole-of-government approach to higher education and labour market outcomes. An example of a co-ordinated approach is “LMI for All”, a government initiative in United Kingdom to provide open access to labour market information (Box 6.6).

Box 6.6. Labour Market Information for All, LMI for All (United Kingdom)

LMI for All is a comprehensive labour market information database that aims to optimise access to, and use of, core national data sources that can be used by developers to create websites and applications to help individuals make better decisions about learning and work. During the development phase (2012-2017), various sources of labour market information were identified and tested for their ability to inform the decisions people make about learning and work. These sources were brought together in an automated, single, accessible location to be used by developers to create websites and applications for career guidance purposes. At least 12 organisations or consortia have developed a website or web interface, and three organisations have developed mobile applications. Initial funding was provided by the United Kingdom Commission for Employment and Skills; the portal is now funded by the Department of Education.

Future development of LMI for All include adding a way of linking vacancies to four-digit coded occupation, data which are not yet collected, and to provide more detailed geographical information on the current and projected structure of employment for which official data sources are limited by creating synthetic data (e.g. using microsimulation techniques).

Several case studies on the use of the LMI for All service were published to document the process of designing, developing and implementing a web interface or an application and to demonstrate the broad potential of the LMI for All service in practice.

Source: For general information about LMI for All (LMI For All, 2018_[46]) and (Bimrose et al., 2018_[47]) and for the case studies (LMI For All, 2018_[48]).

It will be important to develop evaluation mechanisms that include ex-ante and ex-post evaluations of programmes that seek to strengthen the labour market relevance and outcomes of higher education in order to capture information on their effectiveness and implementation on the ground.

Fostering collaboration across secretariats, government agencies and between levels of governments

The Mexican higher education system, with its 13 subsystems, is highly complex and lacks co-ordination. This complexity, coupled with a federal system of government and regional diversity, make steering the system difficult, resource intensive and prone to inefficiencies.

Although the labour market relevance and outcomes of higher education have not been a priority overall, during 2013-2015, a special committee was created in Parliament on Strengthening Higher Education and Training to Promote Development and Competitiveness (CEFESCDC), and discussions resulted in a document with a series of recommendations to improve progress in this area.

Federal and state governments share responsibility for the governance, regulation and co-ordination of higher education, although the federal government plays the most important role and contributes over three-quarters of the funding (OECD, 2017_[49]). The Higher Education Co-ordination Act (1978) sets some guidelines on co-ordination between levels of government and institutions, but it lacks clarity. The National Council of Education Authorities (*Consejo Nacional de Autoridades Educativas*, CONAEDU) brings together the 32 state secretariats for education and the federal secretary for education. CONAEDU's higher education chapter is not active and no meetings have occurred in the last six years. Consequently, there is currently no mechanism to co-ordinate higher education between the federal and state governments.

There have been various attempts to facilitate planning between federal and state governments. The State Commissions for Higher Education Planning (*Comisión Estatal para la Planeación de la Educación Superior*, COEPES) were created as advisory intermediary bodies that act as a forum for members to express their views without decision making power. Public funding for COEPES was discontinued and commissions currently only operate in some states. Where commissions still exist they include higher education institutions that are members of ANUIES and other institutions, representatives of industry and professional organisations. Some targeted funding programmes require the preliminary approval of the proposal by the state COEPES, if one exists.

The National Productivity Committee (CNP) was created in 2013 as a mechanism to co-ordinate across government. The CNP is a consulting committee of the federal government which brings together several federal secretariats (education, economy, finance and labour and social welfare), the President's office, CONACyT, business associations, chambers of commerce, trade unions and four higher education institutions. The CNP has a subcommittee on human capital (*Subcomité de Capacitación y Certificación de Competencias Laborales*), which aims to enhance the contribution of human capital to the productivity and competitiveness of the Mexican economy. ANUIES and FIMPES are currently not members of the CNP, which limits the representation of a highly complex system of close to 3 800 institutions to only four higher education institutions.

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 provides a useful forum to raise awareness of the labour market relevance and outcomes of higher education across governments. However, its impact will be limited if the sectoral programmes of the federal secretariats of education, labour and social welfare and economy continued to be designed in a silo approach. Although the CNP was designed to have committees at the state level, few states have active committees.

The regional diversity of Mexico's economy offers rich potential, and maintaining a good geographic distribution of higher education institutions has been a policy priority for several decades. This has resulted in the creation of new higher education institutions in smaller towns and rural areas, which has increased the opportunities for young people in these locations to access higher education. However, some state governments have not been able to fulfil their financial commitments for higher education, and the federal government has had to increase its share.

As discussed in Chapter 3, the delivery of high-quality education in these areas is proving challenging as it is difficult to obtain sufficient funding and high-quality academic staff. The absence of an effective planning mechanism has created tensions at the institutional

level regarding the allocation of funding (OECD, 2019^[4]). Most funding from states also originally comes from the federal level in the form of block grants and transfers, as states have limited tax-raising powers.

The variety of higher education institutions across the 13 subsystems and 32 states constitute a complex, but potentially very rich and diverse, higher education system. However, the higher education offer at the state level or regional level is not necessarily well aligned with local labour market needs. For example, in the state of Veracruz, 2 500 engineers graduate annually, but there is not a developed manufacturing industry in the state. This misalignment, along with the low geographic mobility of graduates, results in graduates who remain in their state working in unrelated fields or in lower level occupations. This suggests that greater planning and co-ordination capacity is needed at a local level within states to ensure a diverse offer of programmes and to improve pathways for students. Ireland has made commendable progress in this direction with regional collaborative initiatives (Box 6.7).

Box 6.7. Regional collaborative initiatives involving higher education institutions in Ireland

To aid the implementation of Ireland’s National Strategy for Higher Education to 2030, regional collaborative initiatives of higher education institutions help to achieve the core objectives of a high-quality, sustainable and competitive higher education system.

Regional collaborative initiatives are the building blocks of the 21st century higher education system in Ireland and an important stage for the development of knowledge and innovation regions across the country. Their governance is kept light and flexible in order to maintain the accountability or autonomy of the higher education institutions. The strategic objectives of regional initiatives are clear, simple and well prioritised, and focus, in the first instance, on shared academic planning and improved student pathways.

The Shannon Consortium in Limerick, a city with around 100 000 inhabitants in the Mid-West Region, is an example of such regional initiatives. This Consortium was founded with the leadership of the Limerick Institute of Technology and the University of Limerick and their joint commitment to their region and efforts to boost the regional economy. The 2006 joint bid (together with other regional partners) to the Strategic Innovation Fund, an Irish government initiative, to establish a Shannon Consortium arose directly as a result of the close personal working relationship between the presidents of the institutions.

The collaboration between the higher education institutions has led to a growing number of innovative joint activities in education and research. Examples include a combined graduate school and doctoral programme accreditation and collaboration in lifelong learning courses, as well as applied research activities and new, effective ways to enhance engagement with employers. “Limerick for IT” is an information technology skills partnership launched in 2014 that combines the strengths of the two institutions in partnership with key industry partners, such as General Motors, Johnson & Johnson, Kerry Group, Limerick City Council and Limerick County Council and Ireland’s inward investment promotion agency. The initiative has facilitated attracting foreign direct investment and job creation, which has also led to new forms of collaboration between higher education and industry (e.g. the Johnson and Johnson Development Centre).

A future phase in regional initiatives will need to focus on enhancing the involvement of industry and business representatives and sharing good practices among all regional

initiatives through a “learning from each other” platform that involves the governing bodies of the higher education institutions.

Source: OECD (2017), *Supporting Entrepreneurship and Innovation in Higher Education in Ireland*, (OECD/EU, 2017^[50]).

The links between science and technology policy and higher education policy have weakened over time. CONACyT is responsible for science and technology policy and used to be part of the SEP; however, it currently reports directly to the President of Mexico. CONACyT is the main provider of public competitive research funding. It maintains 27 research centres and has an important role in postgraduate education through the recognition of high-quality postgraduate programmes, some of which are organised in collaboration with industry, and by providing scholarships to students enrolled in these programmes. The weakened relationship between CONACyT and the SEP has affected the alignment between undergraduate and postgraduate programmes, and limits connections between education and research in higher education.

The establishment of a national body to co-ordinate higher education across levels of government will improve the responsiveness of higher education to regional and local needs. This body could build on the experience of COEPES. The CNP should be strengthened as a mechanism to co-ordinate the work of different secretariats and their agencies at the federal and state levels. The human capital subcommittee could play a leading role in the development of a national strategy to enhance the labour market relevance and outcomes of higher education. The human capital subcommittee should include university associations as members, in addition to individual members, to ensure the widest possible representation of the higher education system.

Attention will need to be paid to gaining and maintaining a government-wide focus on the labour market relevance and outcomes of higher education in light of proposed changes to the SEP. The elimination of the sub-secretariat of higher education could increase co-ordination challenges, which need to be addressed to ensure that higher education in Mexico helps students develop labour market relevant skills and go on to experience good labour market outcomes.

Implications for the labour market relevance and outcomes of the higher education system

There is not enough recognition of the importance of higher education in developing labour market relevant skills. This is reflected in the absence of a national strategy that could provide a framework for government initiatives. The role of the government in steering the higher education system is limited to direct-provision higher education institutions (28% of enrolment). The government has little influence over private higher education institutions (33% enrolment) and has a limited role steering autonomous institutions (39% enrolment).

While there are pockets of high-quality higher education, quality assurance mechanisms need to be strengthened to ensure the quality of the system as a whole. Improvements in this area will ensure that students develop the knowledge and skills they need to succeed in the labour market.

There is not sufficient engagement between higher education institutions and employers or across the system, particularly given the vocational nature of Mexican higher

education. Current engagement practices are weak and unevenly developed across subsystems and programmes. This needs to be more systematically applied over the higher education system to ensure the delivery of programmes that meet the needs of the labour market and the development of labour market relevant skills that will help graduates get high-quality jobs.

Dominant teaching practices in higher education institutions do not foster the development of strong labour market relevant skills. Mexican higher education needs to develop a strong culture of excellence in learning and teaching. Currently, excellence in teaching is not rewarded or recognised in higher education. In addition, there is little use of innovative teaching practices, which can help develop strong transversal skills, as well as discipline-specific knowledge. Effective work-based learning is limited due to organisational capacity and social service, which although a commendable practice, needs to be more embedded in the programmes as a form of service learning. Its regulations should be harmonised and streamlined.

Some students are locked out of further studies by the inflexibility of higher education. The current entry requirements into higher education and the recognition of prior learning are limited. In addition, there are difficulties in moving across levels of study and between institutions. The higher education system largely caters to the traditional young student studying full-time on campus, which hinders effective lifelong learning.

Information on the labour market relevance and outcomes of higher education is limited. There are significant gaps, such as a national graduate survey that shows labour market outcomes or further study undertaken, surveys of students on their learning experiences, or employer surveys on the skills of graduates. Existing labour market information is poorly connected to higher education and graduate outcomes. All of this information needs to be co-ordinated and presented in a single, user-friendly way to maximise its usefulness and help students and their families, higher education institutions, employers, and governments make informed decisions.

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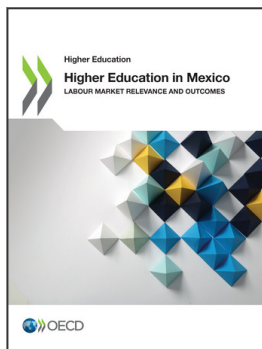
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