



# World TVET Database Mexico

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## Abbreviations

CECyTE	State Centres for Scientific and Technological Studies
CENIDET	National Centre for Research and Technological Development ( <i>Centro Nacional de Investigación y Desarrollo Tecnológico</i> )
CIIDET	Interdisciplinary Centre for Research and Teaching Technical Education ( <i>Centro Interdisciplinario de Investigación y Docencia en Educación Técnica</i> )
CIIES	Interagency Committees for the Evaluation of Higher Education ( <i>Comités interinstitucionales para la Evaluación de la Educación Superior</i> )
CONAEVA	National Commission for the Evaluation of Higher Education ( <i>Comision Nacional para la Evaluacion de la Educacion Superior</i> )
CONALEP	National College of Technical Professional Education ( <i>Colegio Nacional de Educación Profesional Técnica</i> )
CONOCER	National Council for Normalisation and Certification ( <i>Consejo Nacional de Normalización y Certificación de Competencias Laborales</i> )
COPAES	Council for Higher Education Accreditation ( <i>Consejo para la Acreditación de la Educación Superior</i> )
CRODE	Regional Centres for Optimisation and Development ( <i>Centros Regionales de Optimización y Desarrollo de Equipo</i> )
DGEST	Directorate General of Higher Technological Education ( <i>Dirección General de Educación Superior Tecnológica</i> )
DGETI	Directorate General of Industrial Technological Education ( <i>Dirección General de Educación Tecnológica Industrial</i> )
ICAT	Institutes of Training for Work
ICT	Information and Communications Technology
NQF	National Qualifications Framework
OECD	Organisation for Economic Co-Operation and Development
SEP	Ministry of Public Education ( <i>Secretaría de Educación Pública</i> )
SNC	National Competence System ( <i>Sistema Nacional de Competencias</i> )
SNIT	National System of Technical Institutes ( <i>Sistema Nacional de Institutos Tecnológicos</i> )
STPS	Ministry of Labour and Social Welfare ( <i>Secretaría del Trabajo y Previsión Social</i> )

## TVETipedia Glossary

Below are listed TVET terms mentioned in this report. Click on a term to read its definitions on the UNESCO-UNEVOC TVETipedia glossary.

<a href="#">Informal Learning</a>	<a href="#">Qualification</a>
<a href="#">Job</a>	<a href="#">Quality</a>
<a href="#">Knowledge</a>	<a href="#">Quality Assurance</a>
<a href="#">Knowledge economy</a>	<a href="#">Teacher</a>
<a href="#">Labour market</a>	<a href="#">Teacher In VET</a>
<a href="#">National Qualifications Framework</a>	<a href="#">Trainer</a>
<a href="#">Non-formal education</a>	<a href="#">TVET</a>

# Mexico

Population:	127,017,000 (2015)
Youth population <sup>1</sup> :	23,276,000 (2015)
Median population age:	27.4 (2015)
Annual population growth (2010-2015) <sup>2</sup> :	1.37%



Data © OpenStreetMap Design © Mapbox

## 1. TVET mission, strategy and legislation

### TVET mission

TVET in Mexico is known as *Educación Profesional Técnica* and its mission is to provide quality educational services in order to prepare individuals with skills to participate productively in the labour market, and have a high sense of social responsibility and civic values.

### TVET strategy

The promotion of TVET is supported by the **Education Sector Programme 2013-2018 (*Programa Sectorial de Educación*)**. The Education Sector sets out six education-related objectives, including to:

- Improve the quality and relevance of higher secondary education and training for the world of work;
- Ensure that education and training is inclusive; and to
- Encourage science and technology education as it is essential to support Mexico's transition to a knowledge-based economy.

Amongst other things, the Sector Programme highlights the importance of enabling students to attend upper secondary education to gain the skills necessary to contribute to the social and economic advancement of Mexico. The challenge of mitigating school drop-out rates is also imperative in this regard. To contribute to education becoming more inclusive, the Sector Programme also stresses the need for more Information and Communications Technology (ICT) in education and training.

As well as improving the quality of secondary and tertiary education and training programmes by improving teacher training programmes, the Sector Programme also stresses the importance of introducing a qualifications framework which will readdress the mismatch between the skills and competencies taught in secondary education and labour market requirements.

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<sup>1</sup> Population aged 14-25

<sup>2</sup> All statistics compiled from the United Nation's Population Division's *World Population Prospects, the 2015 Revision* (<http://esa.un.org/unpd/wpp/DVD/>)

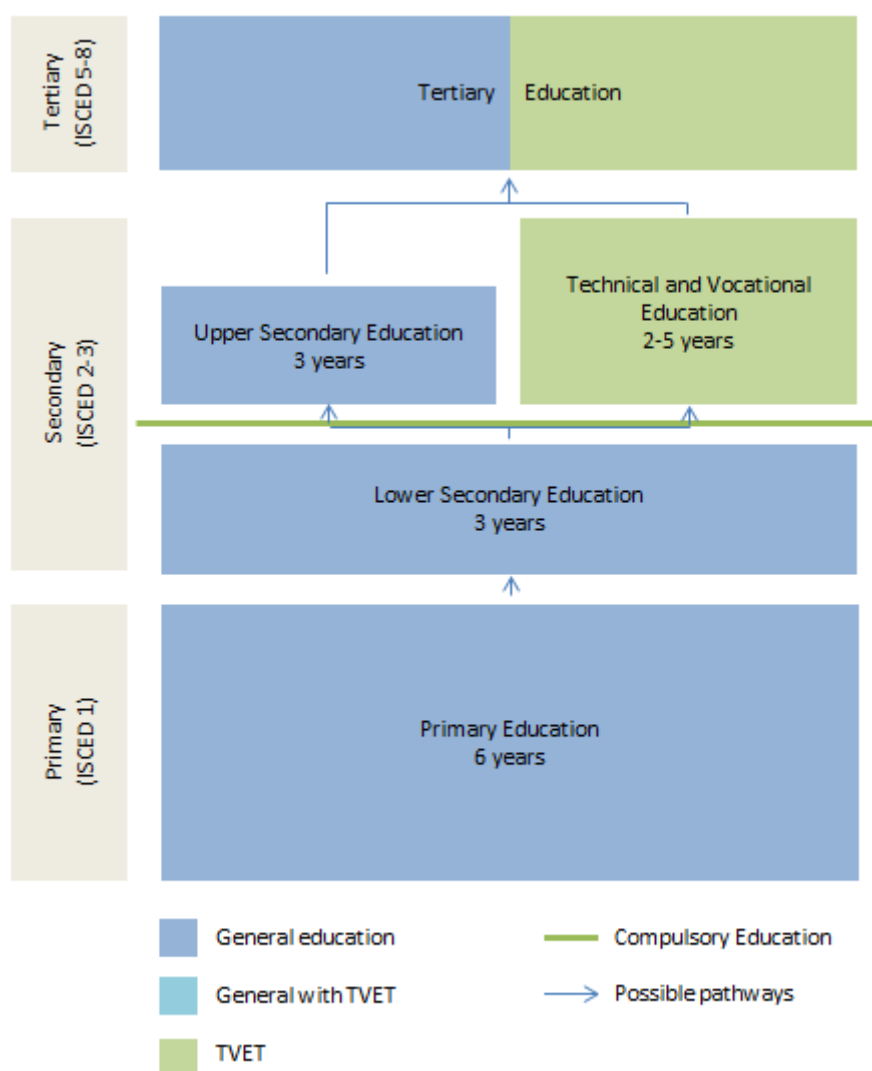
## TVET legislation

- The **Agreement on Dual Training (2015)** establishes and regulates the Mexican dual training system.
- The **General Law on Education (*Ley General de Educación*) (2006)** regulates the education system in Mexico and specifically states that both the federal and state governments are responsible for administering the TVET system.
- Article 38 of the **Law on Public Federal Administration (1976)**, revised in 2003, has established and delineated the duties of the Ministry of Public Education (*Secretaría de Educación Pública*) (SEP).
- The **Law on Higher Education (1976)** has established the conditions and composition of the tertiary education level in Mexico. The Law calls on tertiary education institutions to promote, establish and support educational, scientific, technical and artistic services.

### *Sources:*

- Ministry of Public Education (2015). Dual Training System. <http://www.conalep.edu.mx/normateca/Documents/Junio-2015/ACUERDODISPO11062015.pdf>. Accessed: 24.07.2015.
- Ministry of Public Education (2013). Education Sector Programme 2013-2018. [http://planipolis.iiep.unesco.org/upload/Mexico/Mexico\\_Programa\\_sectorial\\_de\\_educacion\\_2013-2018.pdf](http://planipolis.iiep.unesco.org/upload/Mexico/Mexico_Programa_sectorial_de_educacion_2013-2018.pdf). Accessed: 22.08.2014.
- UNESCO-IBE (2010). World Data on Education VII. Ed. Mexico. Geneva: UNESCO-IBE. [http://www.ibe.unesco.org/fileadmin/user\\_upload/Publications/WDE/2010/pdf-versions/Mexico.pdf](http://www.ibe.unesco.org/fileadmin/user_upload/Publications/WDE/2010/pdf-versions/Mexico.pdf).

## 2. TVET formal, non-formal and informal systems



Scheme compiled by UNESCO-UNEVOC from Ministry of Public Education (2013). Education Sector Programme 2013-2018. [http://planipolis.iiep.unesco.org/upload/Mexico/Mexico\\_Programa\\_sectorial\\_de\\_educacion\\_2013-2018.pdf](http://planipolis.iiep.unesco.org/upload/Mexico/Mexico_Programa_sectorial_de_educacion_2013-2018.pdf).

Upon finishing 6 years of primary education, students proceed to secondary education completing in total 12 years of schooling. Secondary education is divided into two cycles; a junior and senior secondary education each lasting 3 years.

### Formal TVET system

TVET is offered at the secondary education level. Following primary education, students can attend the lower secondary education cycle (*secundaria*) enabling students to continue to the upper secondary education cycle. Here, students can choose between two streams:

- A general upper secondary school programme lasting three years which prepares students for tertiary education; and
- A vocational and technical programme lasting two to five years which aims to prepare students for tertiary level education or the world of work.

### TVET at the Tertiary Level

Tertiary education institutions include universities, technical universities, institutes of technology and teacher-training institutes for basic education. There are three levels at the tertiary education level: higher technical (*técnico superior*), undergraduate (*pregrado*) and postgraduate (*posgrado*). Tertiary level TVET programmes are offered at all levels.

Technical universities and institutes of technology offer programmes and professional qualifications are also awarded to engineers (*Ingeniero*) and architects (*Arquitecto*). For example, the National Polytechnic Institute (*Instituto Politécnico Nacional*) offers undergraduate programmes in, amongst others: nursing, dentistry, engineering, and social and administrative sciences. The National Polytechnic Institute also offers graduate programmes in engineering, physics, mathematics, biological and medical sciences, and social and administrative sciences.

### Non-formal and informal TVET systems

Non-formal TVET is offered by a number of government and nongovernmental actors. For example the National Institute for Adult Education (*Instituto Nacional para la Educación Adulta*) – under the supervision of the Ministry of Public Education (*Secretaría de Educación Pública*) (SEP) – promotes and develops literacy courses, primary and secondary education programmes for youth and adults.

Moreover, at lower-secondary level those over 16 years can choose the vocational track or continue with adult education. Vocational training lasts one to four years (depending on occupation) and is run by the SEP, public bodies and private institutions. The Ministry of Labour and Social Welfare (*Secretaría del Trabajo y Previsión Social*) (STPS) also offers non-formal TVET programmes.

Currently there is little information on informal TVET in Mexico.

#### *Sources:*

National Institute for Adult Education (2010). Who are we ? <http://www.inea.gob.mx/index.php>. Accessed: 22.08.2014.

National Polytechnic Institute (2014). Academic Programs. <http://www.ipn.mx/english/program/Paginas/default.aspx>. Accessed: 22.08.2014.

Ministry of Public Education (2013). Education Sector Programme 2013-2018. [http://planipolis.iiep.unesco.org/upload/Mexico/Mexico\\_Programa\\_sectorial\\_de\\_educacion\\_2013-2018.pdf](http://planipolis.iiep.unesco.org/upload/Mexico/Mexico_Programa_sectorial_de_educacion_2013-2018.pdf). Accessed: 22.08.2014.



### 3. Governance and financing

#### Governance

The Ministry of Public Education (*Secretaría de Educación Pública*) (SEP) is responsible for formal TVET in Mexico on the federal level. Specifically the Under Ministry for Higher Education (*Subsecretaría de Educación Media Superior*) is responsible for TVET programmes in Mexico. The education system in Mexico is decentralised and the SEP shares the responsibility with various national and regional bodies. For example, each state has its own Ministry of Education in charge of the education system and schools. State governments are responsible for administering State Centres for Scientific and Technological Studies (CECyTE) and Institutes of Training for Work (ICAT). Municipalities also provide education services at all levels.

Other institutions involved in the governance of TVET include:

- The **Directorate General of Higher Technological Education (*Dirección General de Educación Superior Tecnológica*) (DGEST)** is responsible for the National System of Technical Institutes (*Sistema Nacional de Institutos Tecnológicos*) (SNIT) consisting of 263 institutions: 126 federal technological institutes, 131 decentralised technological institutes, four Regional Centres for Optimisation and Development (*Centros Regionales de Optimización y Desarrollo de Equipo*) (CRODE), an Interdisciplinary Centre for Research and Teaching Technical Education (*Centro Interdisciplinario de Investigación y Docencia en Educación Técnica*) (CIIDET), and a National Centre for Research and Technological Development (*Centro Nacional de Investigación y Desarrollo Tecnológico*) (CENIDET). The SNIT aims to improve TVET services, enhance access to TVET programmes, promote the use of Information and Communications Technology (ICT) in TVET programmes, and enhance school and institution management structures; and
- The **Directorate General of Industrial Technological Education (*Dirección General de Educación Tecnológica Industrial*) (DGETI)** aims to train people with technological expertise in the industrial, commercial and service sectors. DGETI has 433 campuses distributed throughout the Mexican: 168 Industrial Technology Research Centres and Services and 265 Centres of Industrial Technological Baccalaureate and services. These schools provide secondary education and offer a number of qualifications.

The **National College of Technical Professional Education (*Colegio Nacional de Educación Profesional Técnica*) (CONALEP)** is one of the leading TVET institutions providing TVET programmes according to the Mexican dual system. CONALEP's objectives are to:

- Develop new programmes according to the demands of the labour market;
- Update the curriculum and teaching equipment;
- Reduce the failure and school drop-out rate;
- Implement strategies to develop scholarship programmes for students;
- Strengthen CONALEP's international cooperation in the field of TVET;
- Implement strategies to expand the number of opportunities for students to attend schools; and to
- Promote links with the industrial sector to reduce the unemployment rate.

CONALEP has 309 campuses in Mexico and 303,000 students. The curriculum focuses on 47 different disciplines in the industrial and services sectors and aims to prepare students for post-secondary education or the labour market.

## Financing

Financing for TVET comes mainly from the federal and state governments, and specifically the SEP, the Ministry of Labour and Social Welfare (*Secretaría del Trabajo y Previsión Social*) (STPS), and the Ministry of the Economy (*Secretaría de Economía*) which is responsible for setting the public sector budget.

### *Sources:*

- Directorate General of Higher Technological Education (2014). Sistema Nacional de Institutos Tecnológicos. <http://www.snit.mx/informacion/sistema-nacional-de-educacion-superior-tecnologica>. Accessed : 22.08.2014.
- OECD (2011). OECD reviews of vocational education and training – Learning for Jobs. <http://www.oecd.org/dataoecd/20/47/47955326.pdf>. Accessed: 22.08.2014.
- National College of Technical Professional Education (2013). Medium Term Programme 2013-2018. <http://www.conalep.edu.mx/normateca/legislacion/Documents/Planes%20y%20Programas/PMPCONALEP2013-2018.pdf>. Accessed: 24.07.2015.

## 4. TVET teachers and trainers

The Ministry of Public Education (*Secretaría de Educación Pública*) (SEP) is responsible for teaching and the quality of TVET teachers and trainers. Specifically the Interdisciplinary Centre for Research and Teaching Technical Education (*Centro Interdisciplinario de Investigación y Docencia en Educación Técnica*) (CIIDET) offers postgraduate specialisations in basic education and information technology (IT) for learning. The CIIDET also offers continuing education for TVET teachers and trainers. In order to be admitted to postgraduate programmes, potential TVET teachers and trainers are required to have:

- An undergraduate degree in teaching from teacher-training Institutes (for example the *Instituto Superior de Formación Docente*);
- Work experience; and
- Passed a selection process.

### *Sources:*

- Interdisciplinary Centre for Research and Teaching Technical Education (2014). Homepage. <http://www.ciidet.edu.mx/ciidet/?r=site/index>. Accessed: 22.08.2014.

## 5. Qualifications and Qualifications Frameworks

### Secondary vocational education

Programme	Duration	Qualification
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General and vocational upper secondary education	3 years	<i>Bachiller Técnico</i>
Vocational upper secondary education	3 years	<i>Técnico Profesional</i>

## Post-secondary vocational education

Programme	Duration	Qualification
Short programmes	Varies	<i>Técnico Superior Universitario/ Profesional Asociado</i>
Higher technical	2-3 years	<i>Técnico Superior</i>
Undergraduate programme	Varies	Engineer ( <i>Ingeniero</i> ); Architect ( <i>Arquitecto</i> ); Bachelor's ( <i>Licenciado</i> )
Postgraduate programme	Varies	Specialisation ( <i>Especialización</i> ); Master's ( <i>Maestro/Magister</i> ); Doctor

## National Qualifications Framework (NQF)

Mexico does not have a comprehensive National Qualifications Framework. TVET qualifications are based on the National Competence System (*Sistema Nacional de Competencias*) (SNC) which is overseen by the National Council for Normalisation and Certification (Consejo Nacional de Normalización y Certificación de Competencias Laborales) (CONOCER). CONOCER is the only institution in Mexico that grants official certificates of competency. Competency standards for each sector are developed by Competences Management Committees composed of individuals accredited by CONOCER to serve as representative bodies in a given industry.

## Quality assurance

Quality assurance is the responsibility of the Ministry of Public Education (*Secretaría de Educación Pública*) (SEP). Specifically the CONOCER – under the SEP – is responsible for TVET qualifications. Moreover the National Commission for the Evaluation of Higher Education (*Comisión Nacional de la Evaluación de la Educación Superior*) (CONAEVA) inspects education institutions and the evaluation and accreditation of higher education programmes is the responsibility of the Interagency Committees for the Evaluation of Higher Education (*Comités interinstitucionales para la Evaluación de la Educación Superior*) (CIIES) and of the Council for Higher Education Accreditation (*Consejo para la Acreditación de la Educación Superior*) (COPAES).

### *Sources:*

National Council for the Standardisation and Certification of Occupational Competencies (2014). National Competence System. [http://www.conocer.gob.mx/index.php/index.php?option=com\\_content&view=category&layout=blog&id=1&Itemid=3](http://www.conocer.gob.mx/index.php/index.php?option=com_content&view=category&layout=blog&id=1&Itemid=3). Accessed: 22.08.2014.

## 6. Current reforms, major projects and challenges

### Current reforms and major projects

The aforementioned **Education Sector Programme 2013–2018** (*Programa Sectorial de Educacion*) (Chapter one) is the main reform programme in Mexico regarding the education and TVET system.

An important development has been the introduction of the Mexican dual system. In line with the objective of the Education Sector Programme 2013–2018 to strengthen the relevance of job training, upper secondary education and tertiary education to the needs of the labour market, the Mexican dual system has a number of characteristics:

- Dual training programmes last at least three years;
- Students must be enrolled in an institution offering the dual system, and must be at least 16 years old;
- The curriculum is consistent with the competency standards listed in the National Competence System (*Sistema Nacional de Competencias*) (SNC);
- The programme is divided into theoretical knowledge taught by a professor, and practical knowledge taught in the workplace by an supervisor according to an agreed work plan; and
- Student evaluation is carried out by the school and the company and is administered through a set of guidelines.

The Mexican dual system is being developed and implemented with the support of the German Federal Institute of Vocational Education and Training (BIBB). Although it shares some common features with the German dual system, the model implemented in Mexico is fully adapted to the local needs and conditions.

### Challenges

According to UK Trade and Investment and the Organisation for Economic Co-Operation and Development (OECD), TVET in Mexico faces a number of challenges, including to:

- Coordinate the various subsystems in the upper secondary education level to develop a coherent TVET system;
- Enhance the links between the TVET system and the labour market and the economy;
- Update TVET qualifications and improve their status in the labour market;
- Develop a national vocational qualifications framework;
- Enhance TVET teachers and trainers by improving teacher training programmes; and
- Develop national TVET policies.

### *Sources:*

Caceres-Reebs, D. & Schneider, U. (2013) Vocational education and training in Mexico – how the country has tropicalised the dual model. BWP/5, BIBB. <http://www.bibb.de/en/22624.php>

- Ministry of Public Education (2015). Dual Training System. <http://www.conalep.edu.mx/normateca/Documents/Junio-2015/ACUERDODISPO11062015.pdf>. Accessed: 24.07.2015.
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- UK Trade and Investment (2013). Vocational and Technical Education: Mexico's Case. <http://www.google.de/url?sa=t&trct=j&tq=&esrc=s&source=web&tcd=2&tved=0CC4QFjAB&url=http%3A%2F%2Fwww.tvetuk.org%2Fwp-content%2Fuploads%2FUKTI-market-briefing-Mexico.pptx&ei=Xg73U7CFFKWp7Aa4voDQDQ&usq=AFQjCNFupcOUejVGAQ8V0qi5SfMINwqfg&bvm=bv.73373277,d.ZGU>. Accessed: 22.18.2014.

## 7. Links to UNEVOC centres and TVET institutions

### UNEVOC Centres

- [<http://www.unevoc.unesco.org/go.php?q=UNEVOC+Network+-+Centre&tid=412> Directorate General of Industrial Technological Education]
- [<http://www.conalep.edu.mx/normateca> National College of Technical Professional Education]

### TVET Institutions

- [<http://www.dgeti.sep.gob.mx/> Directorate General of Industrial Technological Education]
- [<http://www.ipn.mx/Paginas/inicio.aspx> National Polytechnic Institute]
- [<http://www.sep.gob.mx/> Ministry of Public Education]
- [<http://www.snit.mx/> Directorate General of Higher Technological Education]

## 8. References and further reading

### References

- Caceres-Reeb, D. & Schneider, U. (2013) Vocational education and training in Mexico – how the country has tropicalised the dual model. BWP/5, BIBB. <http://www.bibb.de/en/22624.php>.
- Directorate General of Higher Technological Education (2014). Sistema Nacional de Institutos Tecnológicos. <http://www.snit.mx/informacion/sistema-nacional-de-educacion-superior-tecnologica>. Accessed : 22.08.2014.
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## Further reading

- National Council of Standardization and Certification of Labour Competencies. <http://www.conocer.gob.mx/english/>