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Country Case Study: Technical Vocational Education and Training (TVET) Programs in Chile

Authors:
Miski Peralta Rojas
Paola Bordón Tapia
Johanna M. Kemper
Karina Maldonado-Mariscal

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Contact
Paola Bordón Tapia
Department of Economics
Universidad Alberto Hurtado
Erasmo Escala 1835 Santiago, Santiago – Chile

ETH Zurich
KOF Swiss Economic Institute
Leonhardstrasse 21
8092 Zurich, Switzerland,

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Miski Peralta Rojas[1]*
Paola Bordón Tapia[1]
Johanna M. Kemper[2]
Karina Maldonado-Mariscal[2]

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[1]Universidad Alberto Hurtado, Department of Economics, Erasmo Escala 1835 Santiago, Santiago – Chile.
*Corresponding Author: Miski Peralta Rojas, Email: miskiperalta@gmail.com
[2]ETH Zurich, KOF Swiss Economic Institute, Leonhardstrasse 21, 8092 Zurich, Switzerland

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List of Abbreviations

CAE	Credit with state guarantee
CIDE	Education Research and Development Centre
CEMETS	The Centre on the Economics and Management of Education and Training Systems
CFT	Technical Formation Centres (vocational schools)
CNA	The National Accreditation Commission
CNED	National Council of Education
CORFO	Chilean Economic Development Agency
CVC	Curriculum Value Chain
DT	Differentiated Training
DUOC	Peasant Worker's University Department
EMTP-D	Technical-Professional Secondary Education, Dual Programme.
EMTP-T	Technical-Professional Secondary Education, Traditional Programme
EMCH	The Humanist Scientific Teaching Average
EPJA	Education for Youth and Adults
DFL	Decree in Force of Law
DL	Decree Law
FD	Free Disposal
FIC-R	Innovation Fund for Competitiveness
GT	General training
GVA	Gross Value Added
INACAP	National Vocational Training Institute
IP	Professional Institutes
ISCED	International Standard Classification of Education of United Nations Educational, Scientific and Cultural Organization
MINEDUC	Ministry of Education
NGO	Non-governmental Organization
OMIL	Municipal Offices of Labour intermediation
OTEC	Technical Training Organization
SDC	Swiss Agency for Development and Cooperation
SENCE	National Training and Employment
SERCOTEC	Technical Cooperation Service
SIMCE	Educational Quality Measurement System
SNSF	Swiss National Science Foundation
SUTE	Unitary Union of Workers of Education
UPCC	Competency Certification Programme Unit
UTE	State Technical University
VET	Vocational Education and Training

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1 Introduction

The aim of this country case study is to provide an overview of Chile's formal and non-formal technical vocational education and training (TVET) landscape. In particular, it aims to provide detailed descriptions of some TVET programmes, its actors and institutions, which were selected based on a conceptual framework classifying TVET programmes into four categories. Such categories show whether the TVET programmes are formal or non-formal and whether they involve workplace-based training in the formal or informal labour market.

As part of the LELAM-TVET4Income project, this publication for Chile is part of a series of case studies that have also been published for Costa Rica, Chile and Benin. By selecting countries representing low- (Benin and Nepal), middle- (Costa Rica) and high-income countries (Chile[1]), we want to approximate the heterogeneity of TVET programmes and economic settings of different countries across the world (OECD, 2018:465). In that regard, Benin and Nepal represent countries with a large informal sector (about 80 and 60 percent respectively), where also a substantial part of the country's TVET activities takes place. These two countries are also representative for their geographical regions West Africa and East Asia. In contrast, Costa Rica and Chile represent countries in Middle- and South America, where TVET typically takes place in schools and labour market informality is much lower (10-40 percent). Benin, Costa Rica, Chile and Nepal are all part of the LELAM-TVET4Income project (see the box below). In this context, the case studies represent an important step aiming to better understand the TVET landscape in the four countries. Therefore, the main purpose of this study is to gather descriptive evidence to trace out particularities, strengths and difficulties of the countries' TVET programmes.

About the LELAM TVET4Income project

As summarized by its title: *"Linking Education and Labour Markets: Under what conditions can Technical Vocational Education and Training (TVET) improve the income of the youth?" (short title: LELAM TVET4Income)*, the aim of this project is to find out under what conditions and to what extent TVET can help to improve the labour market situation of the youth- especially in east developed, low and middle-income countries. The project consists of six teams coming from five different countries and four continents: Chile, Costa Rica, Benin, Nepal and Switzerland. This project is financed jointly by the Swiss National Science Foundation (SNSF) and the Swiss Agency for Development and Cooperation (SDC). For more info, see: http://www.r4d.tvet4income.ethz.ch/. Each year, stakeholder teams from these four countries attend the CEMETS Summer Institute (http://www.cemets.ethz.ch/), which is a reform-lab for reform-leaders from all over the world who want to improve their national TVET systems. This study helps practitioners to understand the whole TVET landscape in Chile.

[1] Chile became a high-income economy in 2012 and for the purpose of this study, we considered Chile as a middle-income country (United Nations, 2014; World Economic Situation and Prospects report, 2014)

Overview of this Country Case

In Chile, the levels of primary and secondary education are mandatory, with a very high coverage (Ministry de Education, 2017). Around one-third of the Chilean adult population has reached a maximum level of TVET, secondary or higher education (Donoso and Donoso, 2018). Education in Chile is mainly formal, where the government, through the Ministry of Education, is responsible for regulating and monitoring academic and technical education curricula. A characteristic of the Chilean system is its large number of schools subsidized by the State[2]. In secondary technical education, 46.6% of schools are public[3] and 53.3% are private but they also receive public funding[4]. There is no offer of technical education that doesn't obtain public funding.

This study analyses TVET programmes with high enrolment in Chile, which are within the formal and non-formal education. In total, we mapped twelve TVET programmes in Chile. Five of the twelve programmes are part of the formal education system in Chile and seven are part of the non-formal education. Within formal education, two programmes were selected as case studies: The Traditional Professional Technical Secondary Education (EMTP-T) and the Dual Professional Technical Secondary Education (EMTP-D). Other programmes such as the Training in the Working Place or Apprentice Programme represent the non-formal TVET education system. Non-formal TVET programmes depend on the Ministry of Labour through the National Training Service (SENCE), whose main aim is to provide skills to integrate the graduates into the formal labour force of the economy.

In summary, formal TVET programs in Chile are the most important in terms of enrolment and geographic extension. Most of them are financed with public funds. Secondary and tertiary programmes have grown in recent years, however, a closer relationship between technical schools and the employment sector (education-employment linkage) is one of the biggest challenges. As the non-formal TVET programs depend from the government through the Ministry of Labour, these programmes are very short, and their training courses change constantly; thus, most of these programmes are not sustainable over time. Most of the initiatives in non-formal TVET depend on civil society organizations. These organizations mainly pursue to provide greater visibility of the profiles and to improve working conditions.

The three case studies selected for this publication give examples of the formal and non-formal TVET in Chile, they are important programmes in terms of enrolment and expansion in the country. Two cases studies are part of the formal education system and formal employment sector. These cases are very relevant because there are two secondary education training strategies in Chile. Both programmes have a broad national coverage and serve to the most vulnerable sectors of the population. These programmes respond to different curricular strategies, where the role of the companies is quite different. The third case study is part of the non-formal education system and formal employment sector. This is an interesting programme with training in the workplace and represent a relevant case with the potential to be replicated. The enhancement of dual strategies for

[2]There are three types of schools in Chile depending of the source of funding: public (fully financed by the state), private subsidized (via voucher system, where the state pays a fee per student enrolled), and private (no public funding).

[3]Calculation based on Ministry of Education 2018 data (Ministerio de Educación, 2019), see in: http://junarsemantics.s3.amazonaws.com/mineduc/BigData/Visualizaciones/VZ2/index.html. Specifically, the calculation of the percentage of public schools is based on the sum of public schools (44.7%) and administered by local education services (2.3%).

[4]Calculation based on Mineduc 2018 data (Ministerio de Educación, 2019), see at: http://junarsemantics.s3.amazonaws.com/mineduc/BigData/Visualizaciones/VZ2/index.html. Specifically, the calculation of the percentage of private but also have public funding schools is based on the sum of percentages of subsidized private schools (43.6%) and delegated administration (9.4%).

TVET education has an important potential to improve the linkage between the education system and the labour market in order to provide better opportunities for the youth in Chile.

This document is structured as follows. In the first chapter, we introduce some concepts that are important for a common understanding of the topic, we present the theoretical framework to classify and select TVET programmes for the case studies. In the second chapter, we describe the methodology of this country case, how we conducted an asset mapping and expert interviews to gather information about all TVET programmes in Chile and describe how we selected TVET programmes for the case studies. In the fourth chapter, we present the results of our selection procedure and describe the TVET programmes as case studies. Finally, in the fifth chapter, we give conclusions and outlook of this study.

2 Concepts and Theoretical Framework to Classify Formal and Non-Formal TVET

Worldwide, the understanding and definitions of TVET differ and often depend on the country-specific context. In the following, we provide an overview of the most important definitions and concepts. We then use these to construct a conceptual framework for classifying formal and non-formal TVET programmes, which we use to select TVET programmes for the case studies. In addition, we use the concept of Education and Employment Linkage (Bolli et al., 2018), which refers to the extent to which education and employment systems are linked. Finally, we introduce the concept of the Curriculum Value Chain (Renold et al., 2015), which refers to three steps to develop a curriculum and represents a helpful tool to analyse selected TVET programmes.

2.1 Concepts

Different Definitions of Technical Vocational Education and Training (TVET)

There are many different definitions for TVET[5]. In general, definitions are socially constructed concepts that are greatly influenced by national and socio-cultural contexts (Renold, forthcoming). Put on an abstract level, Popper (1994) noted that the definition of a given concept or term—in our case the definition for TVET—does not stipulate its application. Instead, the application of the concept (e.g. TVET) stipulates its definition—which makes it a socially constructed concept. Hence, according to Popper (1994), definitions are always derived from applications ("usage definitions"). At first sight, this implies that definitions for TVET can only be derived from their applications in real life. However, a definition of TVET can also be derived from theory. Popper (1994) states that the principles of any theory can be understood as an implicit definition of the "fundamental concepts" it uses. Moreover, application of fundamental concepts to reality stipulates the definition of this theory. Hence, a definition of TVET does not necessarily need to be derived from real life applications (concrete examples of TVET programmes), but can also be derived by applying different theories of TVET.

[5] See for example: "(…) TVET, as part of lifelong learning, can take place at secondary, post-secondary and tertiary levels and includes work-based learning and continuing training and professional development which may lead to qualifications. TVET also includes a wide range of skills development opportunities attuned to national and local contexts. Learning to learn, the development of literacy and numeracy skills, transversal skills and citizenship skills are integral components of TVET. (…)" (UNESCO-UNEVOC, 2017a). Or: "(...) Technical and Vocational Education and Training (TVET) is concerned with the acquisition of knowledge and skills for the world of work. (…) (UNESCO-UNEVOC, 2017a). (…) Throughout the course of history, various terms have been used to describe elements of the field that are now conceived as comprising TVET. These include: Apprenticeship Training, Vocational Education, Technical Education, Technical-Vocational Education (TVE), Occupational Education (OE), Vocational Education and Training (VET), Professional and Vocational Education (PVE), Career and Technical Education (CTE), Workforce Education (WE), Workplace Education (WE), etc. Several of these terms are commonly used in specific geographic areas. (…)" (UNESCO-UNEVOC, 2017a).

Following Popper (1994), we conclude that all existing definitions of TVET are “working definitions” and therefore not very helpful for the purpose of this paper, as we want to capture formal and non-formal TVET programmes for which learning may also take place in the formal or informal labour market. Hence, instead of using one explicit definition of TVET, we suggest a more open approach that tries to define TVET programmes according to their formality, such as formal and non-formal programmes that may also operate in the informal or formal labour market. In the following, we provide definitions of formal, non-formal and informal education programmes. These definitions are equally applicable to TVET programmes.

Defining Formal Education, Non-Formal Education and Informal Education

Formal education

Formal education can be provided in educational institutions, such as schools, universities, colleges, or provided as off-the-job education and training in enterprises’ training centres (in-company training centres) and workplaces (UNESCO-UNEVOC, 2017b). Usually, it is structured in terms of learning objectives, time or support (from a trainer, instructor or teacher) and typically leads to a formal recognition (diploma, degrees). Formal education is intentional from the learner’s perspective (UNESCO-UNEVOC, 2017c). A written curriculum laying down the objectives, content, time, means of knowledge acquisition and awarded degree exists. Diploma/degrees are usually part of the education system and regulated by the legal framework.

Non-formal education

Non-formal education is embedded in planned activities not explicitly designated as learning (in terms of learning objectives, learning time or learning support). Education that takes place through a short course of instruction but does not usually lead to the attainment of a formal qualification or award, for example, in-house professional development programmes conducted in the workplace (UNESCO-UNEVOC, 2017d). Non-formal education is often delivered by educational providers, companies, social partnership organizations, and public-benefit bodies. In contrast to formal education, non-formal education leads to a formal degree (diploma) that allows the programme graduate to progress within the formal education system (GTZ, 2017). In non-formal education, a written curriculum may exist.

Informal education

Informal education is not structured in terms of objectives, time or learning support. In most cases, it is unintentional from the learner’s perspective and does not lead to a formal degree. It is the kind of education resulting from daily life activities related to work, family or leisure. It is often referred to as experience based learning (e.g. learning-by-doing) and can, to a certain degree, be understood as accidental learning (UNESCO-UNEVOC, 2017e). A hidden curriculum, that is, lessons that are learned but unwritten, unofficial, and often not openly intended such as the transmission of norms, values, and beliefs taught in the classroom or social environment (Martin, 1983), may exist.

Pathway, programme and curricula

Similar to the definition of TVET, there is also no unique common understanding for the concepts of “pathway, programme and curriculum”. Any education system can be divided into three nested layers: pathway, programme and curricula. In the following lines, these descriptions are applied to the TVET context (Renold et al., 2016).

TVET or PET pathway

Are all formal education and training programmes that prepare students specifically for the labour market or focus more on vocational topics, either at the secondary, postsecondary non-tertiary level (TVET pathway) or the tertiary level (PET pathway). In contrast to general education or academic programmes aiming to prepare students for university entry, TVET or PET programmes typically prepare for a direct labour market entry after graduation. In some countries, TVET programmes provide access to higher education (Renold et al., 2016).

TVET or PET programmes

“Programme” refers to the different ways education is organized within either the academic or vocational pathway. Examples for TVET programmes within the vocational pathway are dual programmes combining work-based with school-based TVET (e.g. apprenticeships), purely school-based TVET or training programs at the tertiary level (PET). Programmes contain one or more curricula for one or more specialisation. For the purpose of this study, we focus on the programme level.

TVET or PET curricula

Curricula are study-field specific or occupation-specific learning plans within each programme that lay down the learning content, goals and evaluation criteria to pass or fail a programme.

2.2 Conceptual Framework for Classifying Formal and Non-Formal TVET Programmes

In this section, we constructed a framework to classify TVET programmes[6] for the three country cases. For this framework, we combine the classification of TVET programmes in formal and non-formal education with the notion that TVET programmes that involve workplace-based training can be classified as being part of the formal or informal labour market.

Although informal education exists, there are no informal TVET programmes (see **Error! Reference source not found.**). In the previous chapter, we described informal education as unintentional from the learner’s perspective, as a kind of education resulting from daily life activities related to work, family or leisure, often referred to as experience based learning (e.g. learning-by-doing) or even accidental learning. In contrast, the concept “programme” refers to the structure or form in which education is delivered, which contradicts the un-structured nature of informal training.

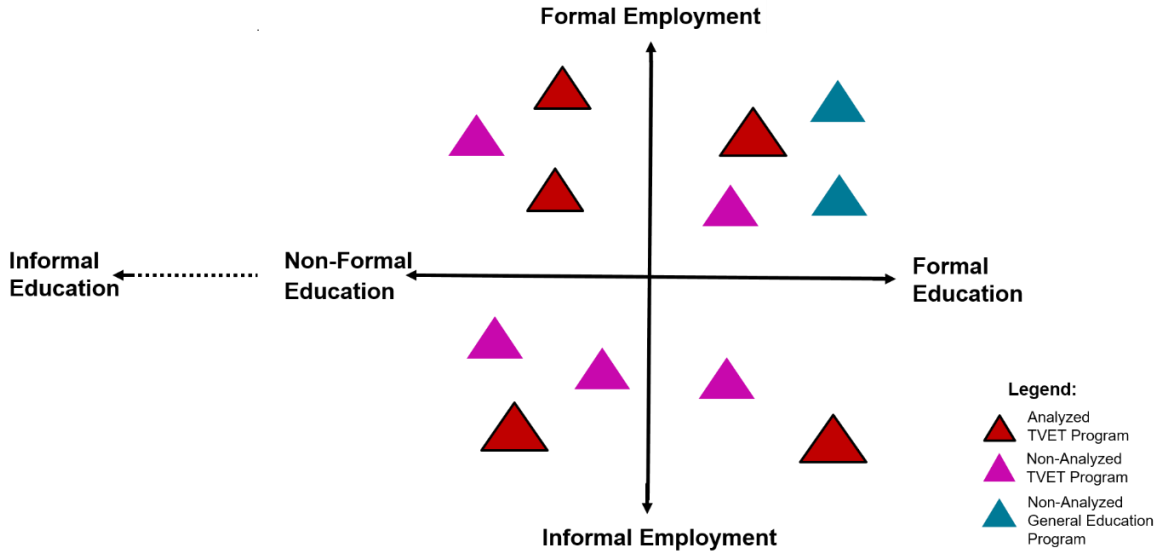
Since the unit of analysis for this study is the programme level, this forces us to restrict the framework to the programme categories formal and non-formal (education system) and formal and informal (employment system) because using the above definition of informal education and learning in combination with the definition of “programme” provides a conceptual contradiction. Therefore, by limiting our conceptual framework to the programme level, TVET programmes are classified into four categories according to whether they are formal or non-formal, and according to whether they involve workplace-based training in the formal or informal labour market.

[6]The term «programme» is generic and linked to the concept of social system theory. See: Renold et al. (2015; 2016).

The framework is depicted in Figure 1. The horizontal dimension of **Error! Reference source not found.** captures, from left to right, whether a given TVET programme is formal or non-formal. The vertical dimension depicts whether the programme involves workplace-based learning in the formal or informal labour market. The top right quadrant in **Error! Reference source not found.** displays all formal programmes that may involve training in the formal labour market, the quadrant represents formal programmes below that may involve training in the informal labour market. The upper quadrant on the left represents all non-formal programmes that may involve training in the formal labour market. The lower quadrant shows all non-formal programmes that may involve training in the informal labour market. Blue triangles in **Error! Reference source not found.** represent general education programmes and pink triangles TVET programmes that are not selected for the case studies. Red triangles represent the TVET programmes that we selected for the case studies.

Table **1** depicts all four categories with examples of TVET programmes for each category.

Figure 1: Asset mapping according to the six possible categories of formal, non-formal and informal education system and informal and formal employment[7] system



Source: own illustration.

Table 1: Four Categories or "ideal types" of TVET Programmes

Category number	Category	Type of Education	Type of Employment	Example
1	formal-formal	formal	formal	Swiss VET system
2	formal-informal	formal	informal	CQP training programme Benin
3	non-formal-formal	non-formal	formal	Master of Business Administration (MBA) that does not allow to progress in formal education system (e.g. to PhD)
4	non-formal-informal	non-formal	informal	SAMI project in Nepal

[7] Formal employment considers the productive industry and services sectors. However, private education providers are not part of the employment system.

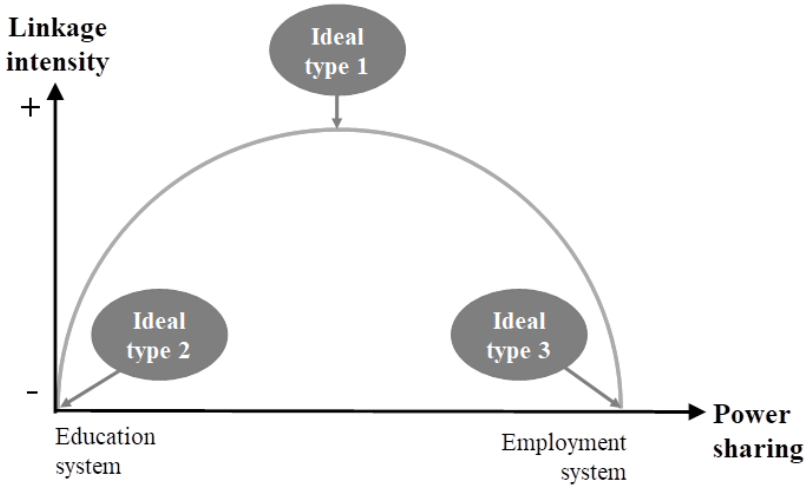
Source: own illustration.

Defining the Education and Employment Linkage

Independent of the question whether a TVET programme is formal or non-formal and may involve training in the informal or formal labour market, optimal labour market outcomes are more likely to be reached if all actors involved in a given TVET programme have a net benefit from participating. Renold et al. (2015; 2016; 2018) argue that in a setting where TVET takes place in schools and firms, the likelihood of achieving relatively better labour market outcomes may be higher than in a setting where TVET is either purely school- or workplace-based. This may be due a stronger involvement of firms in the design of curricula and organization of training, increasing the labour market relevancy of skills. Likewise, in a setting where training not only takes place in firms, but also in schools, it is more likely that the skills taught are not too firm specific. This increases the likelihood that students find jobs in other but the training firms and can upgrade their skills set later on. Hence the more actors from education (e.g. schools) and employment systems (e.g. firms) are involved in the organization and setup of TVET and the better their interest are balanced, the better they are "linked" in the TVET process. Generally, "linkage" refers to all processes where actors from the education and employment systems interact in TVET. Rageth and Renold (2019) build on ideal types of TVET programmes where the education and employment linkage can be visible. **Error! Reference source not found.** shows three ideal types of TVET programmes. Ideal type 1 depicts an equal power sharing between both education system and employment system, while ideal types 2 and 3 show an unbalanced power sharing between the two systems in different directions.

Along the lines of Renold et al. (2015; 2016; 2018), we hypothesize that TVET programmes that are close to ideal type 1 are more likely to yield better labour market outcomes than programmes that are closer to types 2 or 3; irrespective of whether they are formal or non-formal, involve training in the formal or informal employment.

Figure 2: Education-employment linkage for different types of TVET

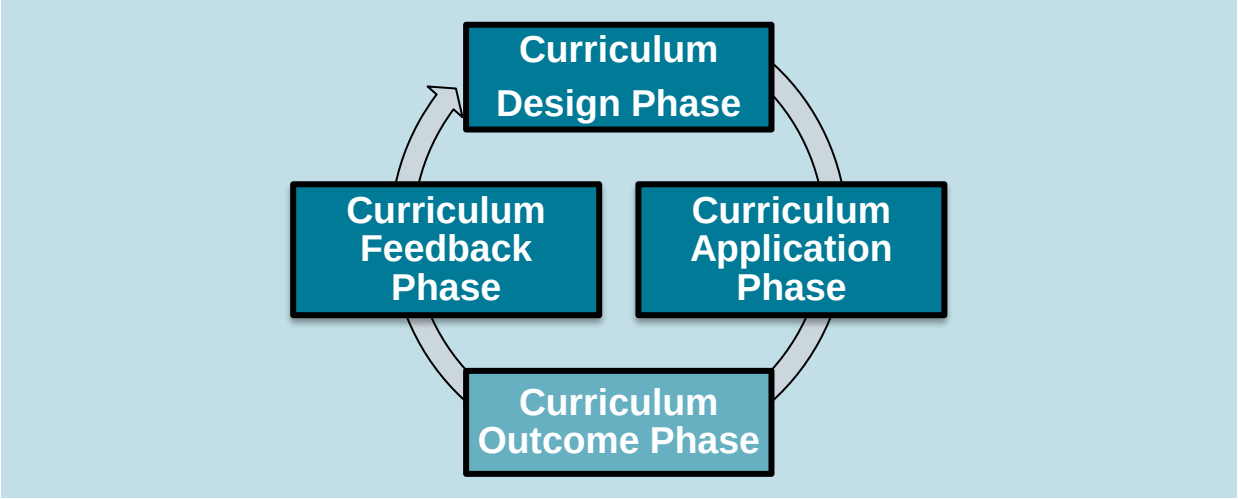


Source: Rageth and Renold (2019) Figure 5.

Curriculum Value Chain

The curriculum is a central element for the functioning of a TVET or PET system by defining the framework and the (quality) standards for the education system. The development of a curriculum can be decomposed into a three-step process with a curriculum design, a curriculum application and a curriculum feedback phase. This theoretical concept called the Curriculum Value Chain (CVC) is depicted in Figure 3 below (Renold et al., 2015). The concept of the CVC helps us to describe the involvement of actors from the education sector and labour market in the TVET programmes described in the case studies. Importantly, this provides us information about which actors are involved and to what extent they are involved in a given programme.

Figure 3: Curriculum Value Chain (CVC)



Source: (Renold, et al., 2015).

In the curriculum design phase, TVET curriculum content and qualification standards are decided upon by the relevant actors. The curriculum application phase revolves around the implementation of the curriculum. Hence, while the curriculum design phase captures the processes of determining the curriculum, the curriculum application phase captures the resulting processes of education and training. Finally, the curriculum feedback phase intends to collect and analyse curriculum outcomes. This evaluation process is important as it may render a more refined curriculum design than was possible in the first place.

Curriculum Design Phase

The design phase is crucial for the whole curriculum process. In order to ensure that the skills taught in the TVET programmes correspond to the needs of the labour market, experts from companies should be involved in defining the qualification standards and learning contents of the curricula.

The curriculum design phase consists of creating the curriculum guiding the education process. It describes who decides what the content of the curriculum will be, who decides on the content, what the standards will be, who decides on the standards, and how achievement will be measured in granting certifications. Defining content relates to identifying the skills students must learn to be proficient at their occupations. Defining the qualification standards is about how this proficiency should be measured through exams. It can involve actors from both the education and employment system.

Curriculum Application Phase

The way in which a curriculum is implemented—especially with respect to learning environments—is important to achieve the intended learning outcome.

The curriculum application phase refers to the process of implementing the curriculum. The main functions or sub-dimensions of the application phase consist of the learning place, the examination regulations in the workplace, financing, equipment provision, teacher provision, and career counselling, and the logistics of the examination. Again, all of these dimensions can involve actors from the education and employment systems, so all are included.

Curriculum Feedback Phase

The curriculum feedback phase deals with the question, whether and how educational outcomes are analysed. Based on this, the curriculum could be re-worked and improved.

Outcomes of the CVC—for students as well as society and the economy—are simply the results of processes in the design and application phases. These outcomes are gathered, analysed, and utilized for updating in the curriculum feedback phase. This captures the process of gathering information on education outcomes as well as the decision process to redesign the curriculum or restart the cycle of the CVC. Its sub-dimensions are information gathering and update timing. As both can involve actors from the education and employment systems, both functions are included.

3 Method

As mentioned before, the main goal of this study is to provide a detailed picture of different TVET programmes in Chile.

The methodology of this study is a country case analysis based on explorative and descriptive research (Yin, 2018: 229). First, the explorative research consisted on desk-based research to gather basic information about all TVET programmes of Chile. In this phase, we elaborated an inventory of TVET programmes in Chile, a so-called asset mapping. We complemented the asset mapping with expert interviews to reassure we cover all TVET programmes known in Chile. The expert interviews represent the “practical insider knowledge”, which is especially useful in an explorative research phase (Bogner, Littig and Menz, 2009: 2). Second, the descriptive research consisted on selecting and describing in detail a small number of TVET programmes in Chile, e.g. three to four TVET programmes fitting into one of the four categories of TVET programmes, as described in chapter 1 for an in-depth analysis. The selection of cases was based on the representation of diversity of case-study types (Gerring, 2007).

In this section, we describe the criteria TVET programmes had to fulfil to be included in the asset mapping, the criteria used to select experts for interviewing, as well as the criteria used to select programmes for a case study.

3.1 Asset mapping

The aim of the asset mapping was to create an inventory of all TVET programmes in Chile, which serve as a basis to select programmes for the case studies. The TVET programmes that were identified in the asset mapping were documented in a way that helped gathering the necessary information to assign the programmes to one of the four categories of the framework (formal/formal, formal/informal, non-formal/formal, non-formal/informal) described in chapter 1. In the course of

documenting TVET programmes for the asset mapping, we allocated the respective TVET programme into one of the four categories, described as “ideal types”.

Criteria for TVET programmes to be included in asset mapping

For a TVET programme to be included in the asset mapping, we developed five inclusion criteria: 1) it must be a TVET programme. 2) It should be identifiable to fit into one of the four categories. 3) The duration of the programme had to be at least a year. 4) The main purpose of the programme had to be initial education and training. Finally, 5) the target group had to be youth, disadvantaged youth or young women. Table 2 provides an overview of the relevant indicators for the asset mapping. The information based on which the inclusion criteria 2-5 are defined, can be found in the Asset Mapping Table A1 provided in Appendix A (using the indicator number in the right column in Table 2).

Table 2: Criteria for a TVET programme to be included in the asset mapping

Criteria	Decision rule or criteria	Indicator from Table A1
1.	Must be a TVET programme	
2.	Degree of formality: Unambiguously identifiable to fit in one of the six categories of the framework described in section 1.1.6.	**8, 11-13, 15-17**
3.	Programme lasts at least a year	**3**
4.	Main function/ purpose of programme is initial education and training	**6**
5.	Target group is youth, disadvantaged youth, young women	**5, 7**

Source: own elaboration.

3.2 Expert interviews

Interviews to experts represented an explorative research to complete information of TVET programmes in Chile. These interviews were particularly important to identify programmes that are non-formal or are very small programmes, which are known only by practitioners. We define country-specific expert characteristics to be considered in the selection process of experts (see Table B1 in Appendix B for more details).

Criteria for selecting interviewees

Our working definition of experts consists of two parts. First, the representativeness of the *institutional affiliation* of the expert for the national TVET sector. Such institutions could be education providers, institutions that monitor and control the system, representatives from the employee (e.g. unions) or employer-side (e.g. trade associations). Second, the *individual role* of the expert *within his/her institution*, which reassures he/she is at the top of his/her institution, or at least in some sort of a key position, and at the same time knowledgeable with respect to TVET. Table B1 in Appendix B provides an overview of *individual attributes* of experts for the formal and informal sector, sorted by the broad category of their *institutional affiliation.*

In the following, we provide a summary of the conducted expert interviews in Chile. We conducted 11 interviews with experts in April of 2018 (See Table 3). From the eleven interviews, seven were conducted with governmental actors, one interview with a representative of the business sector, one interview with a researcher, and two interviews with non-governmental institutions. An overview of the interviewed actors and their institutional affiliation is provided in Table B2 in Appendix B.

To approach the experts, we used the snowball method, which means that some interviewees recommend us other experts. This method was very helpful because most experts in TVET in Chile know each other. The most challenging part of this process was to approach the business managers because they do not have an active role in vocational education and training. First, we contacted authorities from the Ministry of Education, especially those who had attended a specialized seminar on TVET system (CEMETS) in 2017-2018. People from all ministries involved in formal and non-formal VET programmes were interviewed. Subsequently, experts in universities and NGO´s were also contacted. Finally, from the business sector, only one business manager was able to participate in the interview. The low participation of business managers is due to the low partnership between educational programmes and businesses in Chile.

The duration of the interviews was approximately one hour and most of the interviews were conducted in the offices of the interviewees. The interviews included a brief introduction, the explanation of objectives of the project, and the questions from a semi-structured guideline. For reasons of confidentiality as ethical proceedings in conducting interviews, we do not list the names of interviewees.

Table 3: Summary of Interviews

Stakeholder	Number of Interviews
Government	7
Business	1
University (researchers)	1
Non-governmental institutions	2
Total	11

Source: own elaboration.

3.3 Case Studies

The case studies represent a descriptive research in which programmes were chosen due to their characteristics of diversity. This means that each selected programme represents one of the four categories of TVET programmes described in the conceptual framework in chapter 2. Therefore, it is part of the formal/non-formal education and/ or formal and informal labour market. Three main special cases were identified when selecting TVET programmes:

1. No TVET programme was available for a certain category: in such cases, the category was left blank. As a result, a case study for a programme falling into one of the other categories was conducted.
2. Only one TVET programme was available per category: in such cases, the respective TVET programme was directly chosen for the case study.
3. More than one TVET programme per category was available: in such cases, prioritized larger programmes in terms of enrolment and number of curricula/specialisations offered. Secondary level programmes were preferred over higher education programmes and dual over purely school-based programmes.

These criteria are summarized in Table 4. The information based on which the decision rules are defined, can be found in the Asset Mapping Table A1 provided in the Appendix A (using the indicator number in the right column in Table 4).

Table 4: Criteria to Select TVET Programmes Competing in the Same Category Against One Another

Criteria	Decision rule or criteria	Indicator/characteristic from Table A1
Scope of the programme	- Take the larger programme in terms of enrolment and number of curricula /specialisations offered.	**2a), 9**
Effectiveness	- Programmes that target disadvantaged groups received a higher weight - Programmes located at higher levels of the education system (i.e. in the informal system: programmes where age of average student is higher) received a lower weight than those at lower levels, since the latter ones have a larger potential to improve the educational outcome and labour market situation of the youth - Programmes with a work-based component received a higher weight over programmes that are purely school-based.	**5,7-8,10,12**

Source: own illustration.

4 Results

In the first part of this chapter, we provide the results of the asset mapping and expert interviews. The second part of the chapter provides a short summary of Chile's education system and the structure of the economy. The third part of this chapter introduces the case studies of three TVET programmes in Chile.

4.1 Asset Mapping of Chile

In the following pages, we give a short summary of the results of the asset mapping. An overview of the asset mapping in Chile can be found in Table A2 in Appendix A. Detailed information of each programme can be found in the extended Tables A3.

As described in chapter 2, the selection of TVET programmes for the case studies was based on the theoretical framework for classifying formal and non-formal TVET programmes in education and employment systems, where we aimed to represent at least one TVET programme per category per country, for the cases that a programme with these characteristics exists.

In the following Table 5**,** we provide a short summary of the results of the asset mapping in Chile. The middle column of Table 5 shows the total number of programmes per category of formality and the right column shows the selected programmes for case studies. In total, we mapped twelve TVET programmes in Chile. We found four formal-formal programmes, one formal-informal programme, three non-formal-formal programmes, and four non-formal-informal programmes.

Table 5: Distribution of TVET Programmes in Asset Mapping by Category and Finally Selected TVET Programmes for Chile.

Category number	Category	Total number of programmes in asset mapping	Names of TVET programmes selected for case studies
1	formal-formal	4	I. Traditional Professional Technical Secondary Education (EMTP-T) II. Dual Professional Technical Secondary Education (EMTP-D)
2	formal-informal	1	
3	non-formal-formal	3	III. Apprentices Programme (former Training in the Workplace) "Programa Aprendices"
4	non-formal-informal	4	

Source: own illustration.

The formal programmes in this study represent a big proportion of the formal TVET supply of the Chilean educational system. For example, the Traditional Professional Technical Secondary Education (EMTP-T) and the Dual Professional Technical Secondary Education (EMTP-D) are programmes in the upper-secondary education within the technical-professional studies (see more in

figure 5 Chilean Education System). These programmes differentiate between each other just by the hours of training that students spend on-the-job training (OJT) within companies. The EMTP-T programme has significantly increased enrolment in recent years, whereas EMTP-D only represents around 11.28% of the enrolment in secondary technical education.

Non-formal TVET programmes identified in this study are financed by the state and are run by Technical Institutions for Training (Organismos Técnicos de Capacitación, OTEC), which are private entities authorized by the National Training Service (SENCE) from the Ministry of Labour. We identified seven programmes in the non-formal education, three of these programmes lead to the formal labour market whereas four programmes lead to the informal labour market. Within this category of non-formal-formal, we selected the Apprentices programme as a case study.

Other examples of non-formal education are "Chile Valora" and “Peñalolen Seamstress Cooperative”. Chile Valora is a non-formal-formal training programme but also a competency certification system. This programme targets people who need to certify a skill by means of competency exams or need specific courses for further training. The Peñalolen Seamstress Cooperative programme is an non-formal-informal programme created by an NGO and a programme that promotes organization of specific trades in cooperatives.
The case studies we selected represent two programmes from the formal education:Traditional Technical Professional Secondary Education (EMTP-T) and Dual Professional Technical Secondary Education (EMTP-D), and one programme from the non-formal education: Apprenticeships (see sections 4.2.1 to 4.2.3).There are two main reasons why we select these programmes: the intensity of collaboration of the education system with the employment system as well as the enrolment rates. For example, the intensity of collaboration between education and employment system in the curriculum value chain (see concept of CVC in Figure 2) within the formal programme EMTP-T is very low. In contrast, the intensity of collaboration with employment sector in the formal programme EMTP-D is higher. This last programme represents a dual VET programme where students have on-the-job training. This is very important in terms of comparison because both programmes are very similar, with exception of a higher number of hours that students of EMTP-D spend in the companies. Finally, the non-formal Apprenticeship programme takes place in the companies.

In terms of coverage, we selected these three programmes because of the high enrolment for the case of EMTP-T, with 156,378 students enrolled in 2018 (Ministerio de Educación, 2019), and the representation of the dual programme EMTP-D, with 19,892 students enrolled in 2018 (Ministerio de Educación, 2019). Despite enrolment in EMTP-D is not as high as the EMPT-T, it represents an important programme due to its nature as a dual VET programme. The Apprenticeship programme is relevant because has a long tradition in further education and is a programme that leads to the formal labour market (1,190 apprentices enrolled in 2017).

Currently, the technical professional secondary school education brings together a large number of students in the country: 35.8% of enrolment in the upper secondary education, that is, 11th and 12th grade (Ministerio de Educación, 2019). This percentage increases to about 60 percent among students in the first three quintiles of the income distribution (Larrañaga, Cabezas & Dussaillant, 2014).

4.2 Case Studies of Selected TVET Programmes

In the first part of this chapter, we give a short overview of the Chilean education system and the structure of the economy for a better understanding of the location of the TVET programmes in Chile's education system. In the second part of this chapter, we present the case studies.

The Context: Chilean Education System

The formal education system in Chile is represented in Figure 4 below. This figure depicts the levels of education from 0–7 according to the International Standard Classification of Education (ISCED) (UIS, 2012). Level 0 is pre-primary education, and level 7 is post-graduate studies.[8] Technical vocational education and training (TVET) programmes are part of secondary and tertiary education. Although the Chilean system allows for shifts between different education levels, the education system does not provide specific transit pathways for TVET students (see Figure 4). In what follows, we explain each education level of the Chilean education system.

Pre-Primary Education

Pre-primary education (*Educación Parvularia*) is not compulsory, and it is provided for children up to five years old. Pre-primary education is basically oriented towards early stimulation and the development of transversal skills.

Primary Education

Primary education (*educación primaria or educación basica*) is compulsory, and the majority of children start at six years old. This level of educations aligns with levels 1 and 2 from the ISCED. Primary education lasts eight years, and it is divided into two cycles; each cycle last four years.

Secondary Education

Secondary education (*educación media*) has been compulsory since 2003 (Ministerio de Educación 2003, Law 19.876). Students in secondary education usually start at age 14. Secondary education is divided into two stages: lower secondary and upper secondary. Each stage last two years. The first two years involve general education with general subjects in both scientific-humanistic studies *(Enseñanza Media Científico-Humanista; EMCH)* and technical-professional studies *(Enseñanza Media Técnico-Profesional; EMPT)* (see level 3 of Figure 5) (Kis, V. and Field, S., 2009). The last two years represent the first possibility for students to choose between an academic and a technical path. Students aiming to attend a university usually follow the academic EMCH path, whereas students interested in vocational education and training follow the EMTP path. All students who finish secondary education receive a certificate (*Licencia de Enseñanza Media*).

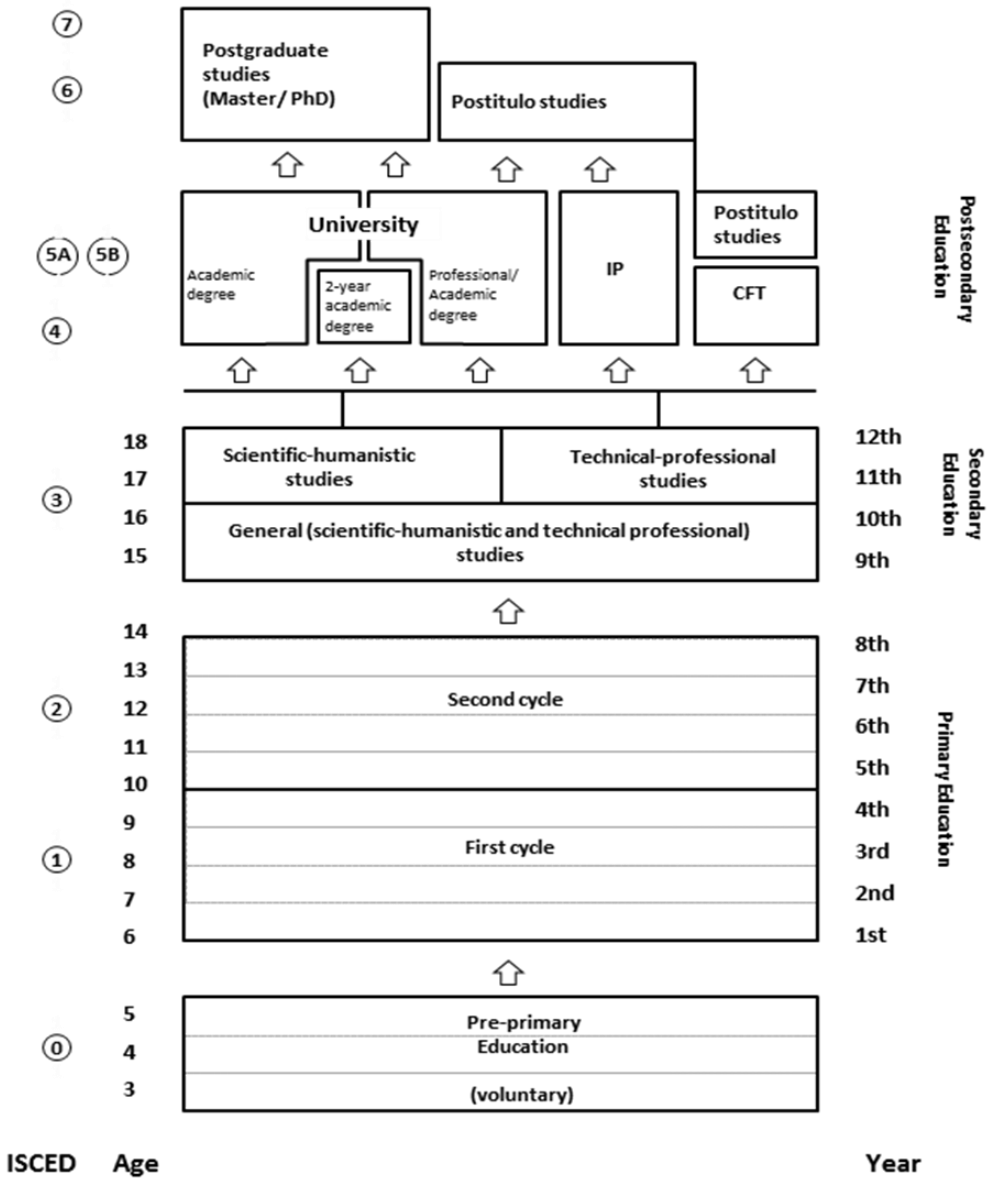
Post-Secondary Education

In post-secondary education, there are three institutions: 1) universities, 2) professional institutes *(Institutos Profesionales; IPs),* and 3) technical formation centres (vocational schools) (*Centros de formacion Técnica*; *CFTs*) (KOF, 2015, Sanhueza, 2015).

[8] For more information on Chile's education system, see KOF Swiss Economic Institute (2015). Factbook Education System Chile. ETH Zürich

1) Universities cover the academic path focussed on scientific-humanistic studies. University bachelor programmes range from four to seven years, according to the major. Universities are the only institutions that provide academic degrees (e.g., bachelor, licentiate, master or doctorate) (VET Commission, 2009: 29).
2) The Professional Institutes are associated with the technical-professional education path. They offer four-year programmes awarding technical degrees. Students can earn professional and technical degrees without a bachelor's degree *(Profesional sin licenciatura).*
3) Technical formation centres offer two-year programmes and have a few areas of specialisation. They provide senior technician diplomas (*Técnico de Nivel Superior*).

Figure 4: Overview of the Formal Chilean Education System



Source: KOF (2015) KOF Factbook Education System Chile

Universities in the centralised admission system require a national admission test (*Prueba de Seleccion Universitaria*) for admission. In contrast, most institutions in the technical-professional education path (IPs and CFTs) do not have admission requirements based on the national admission test. Instead, they choose their own admission requirements**.**

The history of professional-technical education in Chile began in the late 19th century, when representatives of the different economic sectors sponsored the establishment of vocational schools. These vocational schools aimed to provide opportunities for training children with fewer opportunities and from families with limited economic resources (Magendzo cited in Acuña, 2005).

Main reforms in the TVET system in Chile

Chile's education system has experienced several reforms. However, we distinguish four reforms that have influenced the technical-professional education in the country. Moreover, we introduce current changes to laws affecting technical-professional education.

The reform of 1965 pursued the reorganisation of four parts of the education system in Chile. Specifically, it restructured primary and secondary education (division of primary school into two cycles and reduction of length of secondary education from six years to four years) to foster technical and professional education, and it also improved teacher education and implemented a curriculum reform (Zúñiga et al. 2015:81-83). During the 1960s, the State Technical University played an important role in stimulating professional-technical higher education in Chile. Two other training centres that boosted professional-technical higher education were the National Vocational Training Institute, founded by the Chilean Economic Development Agency, and the Catholic University (Sanhueza, 2015).

The reform of 1980, together with the military government (1973–1990), introduced major privatisation in the education sector. The main purpose of this reform was to increase enrolment through the introduction and proliferation of private educational institutions. The introduction of these private institutions also aimed to increase the quality of educational services (Brunner, 2009). The reform of 1980 transferred the administration of schools from the national level to the municipalities (Avalos, 2010). Within this process of transferring administration to the municipalities, the voucher system was introduced; the government started providing subsidies for financing private education. Some of the current institutions of higher education were implemented within this reform (Atria and Sanhueza, 2013, Brunner, 2009, Larroulet and Montt, 2010).

In 1990, another major reform was introduced with the purpose of improving the quality of education with an equity component. This reform was important for post-secondary education. From 1990 onwards, the emergence of universities has been stable. In contrast, the number of institutions that offer post-secondary technical-professional education (CFTs and IPs) has been reduced. From 1990–2005, the number of CFTs in particular decreased (CNED, 2012). In contrast, after 2005, enrolment in technical professional institutes grew, from 435,000 students to 935,000 students between 2000 and 2010 (Ministerio de Educación, 2012).

In contrast to the 1980s reform, the reform of 2010 intended to invert the privatisation initiatives of previous decades, particularly in post-secondary education. More accountability in the education system was a main goal of this reform. This reform also provided new credit loans, scholarships, and subsidies for students.

In 2011, student protests made education reform a major issue on the political agenda. The main issues included free higher education and less privatisation of the education system. In 2013, the government of Bachelet proposed free higher education and several plans to include lower income

students; however, due to the lack of a majority in Congress, Bachelet's proposal did not succeed. The educational reform aimed to reform all educational levels, especially technical education (Ministry of Education, 2017). In 2015, the Law for Educational Inclusion (Law 20,845) established, among other things, free education for all students at EMPT. In 2016, it Law 20,910 was approved: It promoted education as a social right and created 15 state CFTs (Ministry of Social Development, 2017:111). Although the creation of more institutions (providers of education and coordinators of technical-professional education) could be seen as a positive step for the TVET sector, TVET institutions in Chile have limited linkages with the employment sector (CNED, 2017).

Types of School Providers

There are four types of school providers in Chilean formal education (public schools, private subsidised schools, private non-subsidised schools, and schools with delegated administration) (Santiago et al., 2013:15).

- Public schools are fully financed by the state and are administrated by the municipalities. Public schools accounted for 46.6% of total technical-professional secondary education enrolment in 2018 (Ministry of Education, 2019).
- Private subsidised schools are run by a private organisation, usually a non-profit, that receives subsidies per student. These schools are also known as voucher or charter schools. Private subsidised schools accounted for 39.1% of total technical-professional secondary education enrolment in 2018 (Ministry of Education, 2019).
- Private non-subsidised schools are administered by a private organisation and are not eligible for public funding or subsidies. The private school provider can be a for-profit or non-profit entity. This category only captured 0.07% of total upper technical-secondary school enrolment in 2018 (Ministry of Education, 2019).
- Schools with delegated administration are owned by the Ministry of Education. Therefore, they are public schools, but a public or private non-profit organisation manages the administration. These schools are not very common, as they accounted for 14.2% of total technical-professional secondary education enrolment in 2018 (Ministry of Education, 2019).

Chilean Formal Education Funding System

There are three sources of funding for public and private subsidised schools: full subsidies, share subsidies, and preferential subsidies.

- Full subsides: A full subsidy is a student attendance subsidy (voucher) to both public and private subsidised schools. A fixed per-capita amount per student enrolled and attending classes is transferred by the government to the school. The amount is computed based on the average attendance over the previous three months. Thus, payments to schools fluctuate in direct proportion to their enrolment and attendance rates. The regulations have established a base voucher level, which varies according to the level of education, modality of education, and other factors (Cox, 2006). Schools that receive full subsidies cannot charge any fee to students.

- Share subsidies: Within private subsidised schools are establishments with shared financing. These schools receive a fixed per-capita amount per student enrolled and attending classes, but they are allowed to charge monthly fees to students.[9]
- Preferential subsidies: These subsidies are given by the government to the schools that serve students from the most vulnerable population, as these students may have disadvantages and tend to be expensive to educate. The schools that receive the preferential subsidy can be public schools or privately subsidised schools that have signed the Equal Opportunities Agreement.[10]

The Context: The Chilean Economy

Chile's economic growth was among the most rapid seen in Organisation for Economic Co-operation and Development (OECD) countries and the Latin America region between 1990 and 2013. After that period, economic growth diminished, together with employment rates[11] (OECD, 2019). In response, several reforms have taken place in recent years to strengthen the economic sector, labour market, and institutional funding for training. For example, two laws in 2018 created national institutions to develop a national training strategy in vocational education. In the same year, the projects Open Office and GPS Office aimed at simplifying procedures and licenses for companies. A recent reform on early childhood education has aimed at encouraging women to return to the job market (OECD, 2019).

The Chilean economy is highly focussed on the tertiary sector. In Table 6, we present the different sectors of the economy. This table depicts the 2013 gross value added for each sector and the 2013 employment rates. The tertiary sector represents 61% of the gross value added of the economy, followed by the secondary sector with 35%. Similarly, employment rates are concentrated in the tertiary sector (69%), especially in retail trade, repairs, hotels and restaurants, transportation, and information and communication. Twenty-one percent of workers were employed in the secondary sector in 2013; in that sector, mining is the most important activity. Finally, just 9.7% of workers were employed in the primary sector. According to Garcia (2015), about one-quarter of the labour force is employed in the informal sector in Chile. A Chilean government report regarding sustainable development goals for Chile (UNDP, 2017:14) shows that in 2013, 17% of youth between 15 and 24 years old were neither working nor studying. This percentage slightly decreased in 2015 to 16%, but a large portion of young people do not develop their potential through education or participation in the labour market.

Table 6: Breakdown of Total Value Added and Employment by Sector in 2013

Sector	Chile: Gross Value added (%)	Chile: Employment (%)
Primary sector	3.4	9.7
Agriculture, hunting and forestry, fishing	3.4	9.7
Secondary sector	35.3	21.1
Manufacturing, mining and quarrying and other industrial activities	26.8	12.5

[9] Website Ministry of Education: https://www.ayudamineduc.cl/ficha/subvencion-segun-tipo-de-establecimiento-4.

[10] Website Ministry of Education: https://www.ayudamineduc.cl/ficha/subvencion-escolar-preferencial.

[11] Gross domestic product per capita in Chile has average growth rates of: 4.2% from 2002 to 2008 and of 1.4% from 2012 to 2018, while employment rate is of: 0.4% from 2002 to 2008 and -.01% from 2012 to 2018.

of which: Manufacturing	11.5	11.7
Construction	8.5	8.6
Tertiary sector	61.3	69.2
Wholesale and retail trade, repairs; hotels and restaurants; transportation; information and communication	17.5	31.8
Financial intermediation; real estate, renting and business activities	20.9	27.1
Public administration, defense, education, health, and other service activities	22.9	22.9

Sources: OECD (2014a,b) and Eurostat (2015a,b), KOF (2015)

4.2.1 Formal-Formal TVET Programme: Traditional Professional-Technical Secondary Education (EMTP-T)

Introduction

Traditional Professional-Technical Secondary Education (*Educación Media Técnico Profesional Tradicional;* EMTP-T) is a formal programme within the technical-professional education path in Chile. This programme is formal because it has a standardised curriculum and entrance requirements defined by the General Law of Education (Ley General de Educación No. 20.370, 2009). The EMTP-T programme is offered in schools and has structured learning objectives, learning time, and learning support (from a trainer, instructor, or teacher), and students receive formal recognition (a bachelor's degree in secondary education).

There are three areas of training structured in the curriculum of the EMTP-T: general training, differentiated training, and free disposal. In the following paragraphs, we explain each element (see more in section curriculum design phase of this same programme EMTP-T: qualification standards)

Curriculum Design Phase

- General training: the objective of general training is to provide a comprehensive and diverse education relevant to all students, regardless of their graduation options (Ministerio de Educación, 2015).[12]
- Differentiated training:[13] This phase includes a set of modules that respond to the graduation profile in each of the specialties. The specialities have a duration of two academic years plus a professional apprenticeship, which takes place in a company and has a duration of 450 hours.

[12] Ministerio de Educación (2017). Orientaciones para la apropiación de las bases curriculares 7º Básico a 2º Medio. https://media.mineduc.cl/wp-content/uploads/sites/28/2017/05/Orientaciones-apropiacion-BC-7%C2%BA-2%C2%BAM-web-corregido.pdf.

[13] https://www.ayudamineduc.cl/ficha/educacion-media-tecnico-profesional-5.

- Free disposal:[14] The hours of free disposal are defined by each school provider according to its educational project and are compulsory for its students. The new curriculum establishes that scientific-humanistic studies (EMCH) have eight hours and technical-professional studies (EMPT) have six hours of free disposal.

The EMTP-T programme enrolment in 2018 reached 156,378 students.[15] According to the Ministry of Education, EMTP-T represents 31.8% of total enrolment at the upper secondary level. The distribution of students according to types of school providers is as follows: 45.8% of students are enrolled in public schools, 41.4% in private subsidised schools, 0.06% in private non-subsidised schools, and 12.8% in schools with delegated administration (Ministry of Education, 2019).

Each school that offers EMTP-T programmes has specific options of specialisation. According to Decree No. 452, which regulates the curricular bases of EMTP-T, the possibilities are organised as follows: 15 sectors with 35 specialisations[16] (Ministerio de Educación, 2016b), leading to a standard level of professional-technical degree.

According to the Coordinator of Technical-Professional Secondary Education under the Ministry of Education, students should be between 16 and 18 years old; however, the average age of EMTP-T students is higher than that of scientific-humanistic students (EMCH). The reason is that EMTP-T students have higher rates of repetition since they usually come from lower socioeconomic backgrounds. EMTP and EMCH programmes attract different students 'profile. Data shows that 91% of EMTP students belong to the first three quintiles of the income distribution, compared to 67% of students in EMCH programmes.

In the following Table 7, we present a summary of general facts regarding the EMTP-T programme.

Table 7: Facts About the TVET Programme: EMTP-T

Short title of indicator	
VET pathway enrolment share of all upper secondary (%)	31.8% in 2018 (Ministerio de Educación, 2019) *(176,270 of 492,195 students in upper secondary school)*
Programme enrolment share of entire VET pathway (%)	88.7% in 2018 (percentage of students in EMTP-T with respect to all students in technical secondary education) (Ministerio de Educación, 2019) *(156,378 of 176,270 students in technical secondary education)*
Number of curricula/qualifications	35
Share of time spent in workplace (vs. classroom)	10.6% (in 2018) • 450 hours of professional practice at the company[17] • 4,256 hours per year of general training

[14] https://www.ayudamineduc.cl/ficha/marco-curricular-educacion-media.

[15] This refers only to enrolment in upper secondary education, that is, 11th and 12th grade. Ministry of Education, 2019.

[16] Fifteen economic sectors: 1) wood, 2) agriculture, 3) food, 4) construction, 5) metal construction and mechanical, 6) electricity, 7) maritime, 8) mining, 9) graphic design, 10) clothing, 11) administration, 12) health and education, 13) chemistry and industry, 14) technology and communications, and 15) hotels and tourism.

[17] Website Ministerio de Educación. https://www.ayudamineduc.cl/ficha/educacion-media-tecnico-profesional-5.

	• 2 hours per year of differentiated technical-professional training[18])
Work contract (yes/no)	No[19]
Share of vocation-specific content (vs. general content) in classroom education	22 hours of differentiated technical-professional training and 14 hours of general training.
Classroom/workplace sequencing (alternating, sequentially)	2 years (classroom), 2.5 months (workplace)
Frequency of workplace learning (annually, semi-annually, quarterly, monthly, weekly)	Annually
Programme duration (years)	2 years
Involved actors	• Ministry of Education • Secretary of Technical-Professional Training • Private supporters with public financing • Agency for the Quality of Education • Superintendence of Education • National Education Council • Business Advisory Council • Unions and federations
Reforms summary	• Creation of EMTP (1965) • Public education shifts to municipal administration (1980) • Reform of delegated administration (1990) • Distinction between curricula of general formation and differentiated formation (1998) • Compulsory secondary education (2003) • Curricular reform of EMTP (2006) • National strategy for technical-professional formation (2016)

Source: own elaboration

Key Actors

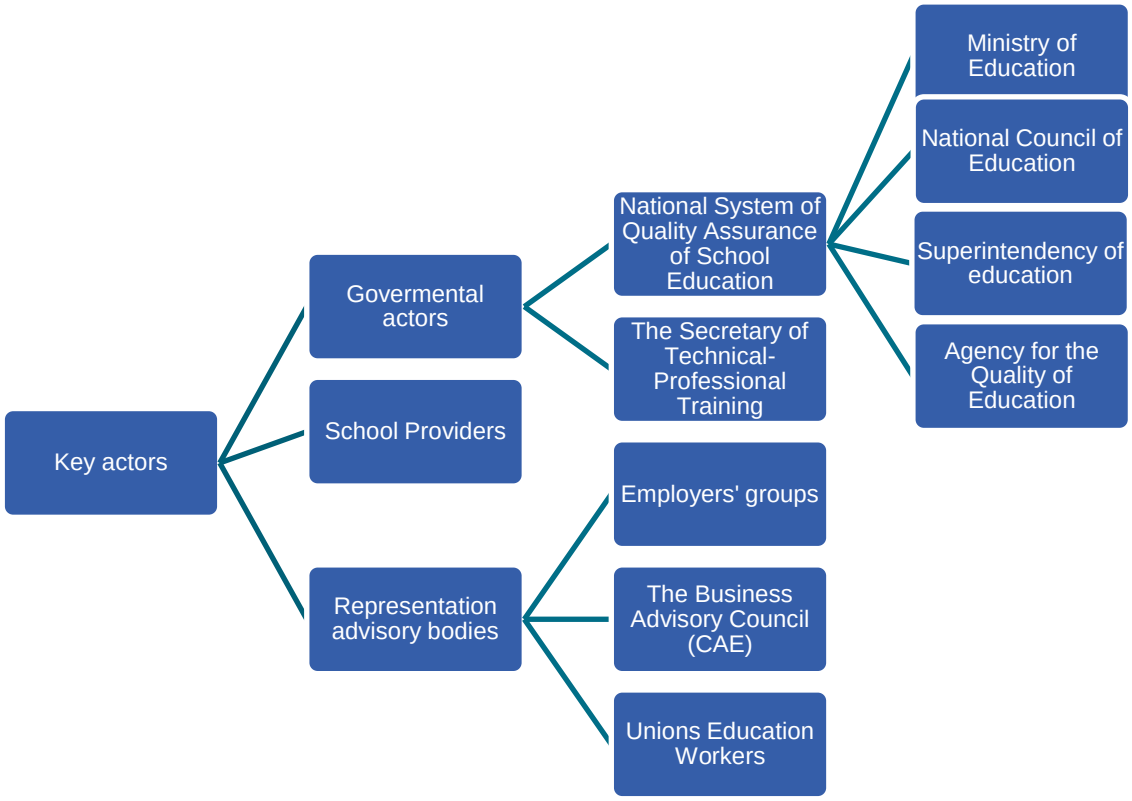
The keys actors of the EMTP-T programme are the central government, school providers, and business sector, along with advisory bodies of the private sector. In Figure 5, we provide a representation of the key actors' dependencies, and in the following paragraphs we explain the role of each actor.

The central government mainly acts through the Ministry of Education. Four types of education providers offer the EMPT-T programme: public schools, private subsidised schools, private non-subsidised schools, and schools with delegated administration. The representation of advisory bodies takes place through the private sector (Business Advisory Council, CAE) and the public sector (unions and student' federations).

[18] Website Ministerio de Educación. Unidad de currículum y evaluación plan de estudio 2018. https://www.curriculumnacional.cl/614/articles-34970_recurso_plan.pdf .

[19] For more on the regulation of professional practices, see the official website of the Ministry for Work: https://www.dt.gob.cl/portal/1628/w3-article-60783.html.

Figure 5: Key EMTP-T Actors



Source: own elaboration, 2018

Government actors

Governmental actors are the three following bodies: the Ministry of Education, the National System of Quality Assurance of School Education, and the Secretary of Technical-Professional Training.

a. The National System of Quality Assurance of School Education: Within the Ministry of Education, there are several organisations that play an important role in technical secondary-level education (ISCED, level 3.B). On one the hand are those organisations linked to the National System of Quality Assurance of School Education, which were created in 2011. On the other hand are bodies responsible for overseeing, evaluating, and supporting institutions related to the quality of education. This system is composed of four bodies, each with different functions: the *Ministry of Education*, responsible for formulating public policies and developing curriculum instruments; the *National Council of Education*, which approves these instruments; the *Agency for the Quality of Education*, in charge of evaluating the performance of students and schools; and the *Superintendence of Education*, which monitors compliance with educational regulations (Consejo Nacional de Educación, 2018b).[20]

[20] Website: https://www.supereduc.cl/conoce-el-sistema-de-aseguramiento-de-la-calidad/.

- *Ministry of Education*: This body is responsible for managing the EMTP-T programme (and other educational programmes). Its main function is to guarantee young Chileans' right of access to quality education (Ministerio de Educación, 2018c).
- *National Council of Education*: This council has 15 members representing different sectors of society. Its main function is to review and approve the curricular bases and new curricula proposed by the Ministry.[21]
- *Agency for the Quality of Education*: This body provides a public service. It is decentralised, has an exclusive council, is endowed with a legal personality, and has its own budget. This agency is related to the president of the republic through the Ministry of Education.[22]
- *Superintendence of Education*: This organisation's main purpose is to ensure that school providers officially recognised by the state comply with the laws and regulations. It also provides information to school providers, examine complaints, and implements sanctions when necessary.

b. The Secretary of Technical-Professional Training: The secretary is responsible for establishing the basic guidelines for a national policy on TVET education. Its function is purely consultative, although this actor developed the National Strategy for Technical-Vocational Training, an intersectoral commitment by the Ministry of Education that contemplates the creation of a new institution, the Technical-Vocational Education Agency, to articulate public and private institutional efforts. This strategy is also the basis for the Professional-Technical Qualifications Framework, which defines the skills required for the productive and service sectors (Ministerio de Educación, 2017a).

School Providers

As explained before, the EMTP-T education providers are educational institutions (i.e., public schools, private subsidised schools, private non-subsidised schools, and schools with delegated administration).

Representation Advisory Bodies

a. Employers' groups: Additional trade associations and corporations that actively work with TVET training include the following:
   - the Federation of Chilean Industry (*Sociedad de Fomento Fabril*),
   - the National Agriculture Society (*Sociedad Nacional de Agricultura*),
   - the Industrial Association of Metallurgists and Metalworkers (*Asociación Industrial de Metalúrgicos y Metalmecánicos*),
   - the Social Development Corporation of the Rural Sector (*Corporación de Desarrollo Social del Sector Rural*), and
   - the Chilean Chamber of Construction (*Cámara Chilena de la Construcción*) (CONFESITEP, 2014).

b. The Business Advisory Council: The CAE is a consultative body from the private sector. Although it is not regulated by law, it provides a formal link between companies and educational establishments. The CAE also works as a consultative body, collecting feedback

21 Website: https://www.cned.cl/.
22 Website: https://www.agenciaeducacion.cl/.

from companies for schools about the quality and relevance of the EMTP-T training delivered. This feedback allows schools to adapt to the needs of local companies. In some cases, the CAE has allowed the developed alumni tracking system to maintain information about those who studied EMTP-T in individual establishments (Fundación Chile, 2016).

Education Workers Unions: The National Confederation of Federation and Trade Union of Workers of Technical-Professional Education (*Confederación de Federaciones y Sindicatos de Trabajadores de la Educación Técnico Profesional*) is a representative body. This organisation combines the different unions and is an active agent in the discussion on reforms and public policies for the sector. It works in alliance with others, such as the Federation of Trade Unions of Professional-Technical High Schools, the Confederation of Workers of Chilean Education, and the Unitary Union of Workers of Education. The Federation of Professional-Technical High School Students was founded in 2016 (El Rodriguista, 2016). Another organisation with less impact is the Unitary Workers Union (CONFESITEP, 2014).

Finance

There are two financing schemes for EMTP[23] regulated by two laws (the Decree with Force of Law, DFL No. 2 of 1996 and the Decree Law No. 3.166 of 1980): The first regulates the subsidised education system, and the second regulates establishments that operate under a delegated administration system. In the subsidised education system, subsidised municipal and private establishments receive a fixed amount per student, based on attendance. This subsidy can also vary depending on the field and the modality of training (full or partial).

The establishments receive an additional subsidy for maintenance, aimed at the cost of conservation, and repair of the establishments (both municipal and subsidised). The amount again depends on the type of education and type of workday. The payment is annual and based on the average attendance of the previous year (National Productivity Commission, 2018).

For the schools with delegated administration, the Ministry of Education provides a fixed contribution, regardless of the number of students, to cover operating expenses. This contribution usually varies substantially since the calculation used by the Ministry only considers the maximum amount required by high schools for their operation, without considering the number of students or type of specialty offered (MINEDUC, 2012).

In addition, a new law that defines the EMTP Equipment Plan was created in 2008 (the Decree of Law, DL No. 423 of 2008). This law provides funds to municipal technical-professional and private establishments to subsidise the renewal of, for example, their pedagogical resources, including machinery and equipment, tools, computers and didactic material, and security gear.

[23] This section was prepared with information from Arroyo, C. and Pacheco, F. (2018) *Los Resultados de la Educación Técnica en Chile. Nota Técnica Comisión Nacional de Productividad*, p.28–29. Available at https://www.comisiondeproductividad.cl/wp-content/uploads/2018/06/Nota-T%C3%A9cnica-3.-Educaci%C3%B3n.pdf.

Curriculum Development

Curriculum Design Phase

The design phase is crucial for the whole curriculum process. To ensure that the skills taught in the TVET programmes correspond to the needs of the labour market, experts from companies should be involved in defining the qualification standards and learning content of the curricula.

Qualification Standards

In 1998, Supreme Decree (Decreto Supremo, DS Law No.220) structured the curriculum of secondary education in three areas: general training, differentiated training, and free disposal.

In contrast to scientific-humanistic or general education (EMCH), EMTP-T is oriented towards the development of "graduation profiles" according to the selected major.[24] These profiles define the competences that students must acquire to properly handle their future careers. Each graduation profile has at least nine modules, equivalent to 1,800 pedagogical hours. However, schools are not compelled to follow or use the modules; they can define the modules of the specialisation by the graduate profiles themselves.

In 2006, DS Law No. 220 was modified to update the objectives of the specialities and adapt them to the needs of the labour market. In 2009, the modification of 21 specialties was approved, but the modification process was suspended until 2013, when the new curricular bases were approved by DL Law No. 452). This law restructured the specialities and majors and defined specific competences for the first and second years of differentiated training (Comisión Nacional de Productividad, 2016).

In total, there are five curricular instruments used in EMTP-T (Ministerio de Educación, 2015a):

1. Curricular bases define a graduation profile and work context for each specialty or major.
2. Study plans determine the hourly workload (annual and weekly) for general training, differentiated training, and hours of free disposal.
3. Programmes of study determine the curricular organisation for each specialty and major.
4. Examination Form of Qualification Standards. It does not exist a permanent instance for reviewing examination of qualification standards.
5. Quality of employers' involvement in the process. The involvement of companies is consultative and voluntary. As mentioned in the previous sections, there are instances of collaboration in educational establishments, such as via business councils, but they are not mandatory and depend on the managerial capacity of the directors of each educational establishment.

Curriculum Application Phase

Students from EMTP-T programmes attend theoretical and practical classes on the premises of their respective educational institution; therefore, the curriculum is taught within the classrooms. Establishments must have the equipment and machinery to teach the specialties.

According to a study conducted by the Research Centre and Development for Education (*Centro de Investigación y Desarrollo de la Educación; CIDE*), curriculum implementation is different for each

[24] Sectors and specialties were mentioned above.

EMTP-T high school, although on average, students spend 39.8 weekly hours: 27.1 hours of technical training and 4.8 hours of free disposal (CIDE, 2009).

Currently, there are no vocational guidance programmes for EMTP-T students exclusively, but this option is being considered in the implementation of the National Strategy of Professional-Technical Training. More details about the curriculum application phase for the EMTP-T programme are explained below:

- Learning place: Training takes place exclusively in the educational establishment, except for the period of professional practice.
- Workplace training regulation: Professional practice is carried out after completing the training in the educational establishment and is regulated by the General Law of Education No. 20,370 of 2009. This phase involves 480 pedagogical hours (in 45-minutes segments) in a company under the supervision of a tutor. Students receive payment for transportation and school insurance during that period.
- Cost sharing: Costs are not shared. The costs are financed exclusively by the educational establishment.
- Equipment provision: The provision of equipment is guaranteed by the educational establishments, and their renewal depends largely on the financing they receive from the state.
- Teacher provision: Hiring teachers depends exclusively on the educational establishment, regardless of the type of establishment (private, public, or delegated administration).
- Teacher/trainer education: The company provides a supervisor for the period of practice. This supervisor is an employee of the company, but there is also a teacher from the establishment responsible for evaluating the practice and contacting the trainer responsible for the practice in-company.
- School management: The administration of the establishment depends on the type of provider.
- Examination: Exams are designed by the teaching teams of the establishments based on the curricular contents. There is no participation of the company at this stage.

Curriculum Feedback Phase

The Educational Quality Measurement System (SIMCE) was created in 1988 and since 2012 has been applied by the Agency for the Quality of Education. The SIMCE is a standardised test with multiple questions. It is given to students in the second, fourth, sixth, and eighth years of primary education and to second- and third-year students in secondary education. The test aims to measure the learning results based on the current year's curriculum, but only for general education.

Currently, there is no test or evaluation undertaken by the Agency for the Quality of Education that evaluates EMTP learning outcomes for the differentiated training. However, one initiative of the Secretary of Technical-Professional Training is to implement an evaluation test to assess the learning results of a specific training cycle. The only evaluation that students receive is an assessment designed by the teacher. This evaluation includes the student's performance during the apprenticeship at the company. More details about the curriculum feedback phase for the EMTP-T programme are explained below:

- Information gathering: The productive sector participates only as an advisory body, which means that information gathering from companies for the curriculum design and application phases is very limited.
- Frequency of updates: In 2013, the new curricular guidelines for EMTP were approved. These guidelines provide plans and programmes for specialties and different majors. There are no permanent curricular updates. The last general update of the curriculum was the National Qualifications Framework.[25] However, the implementation of the National Qualification Framework is voluntary. Companies have participated in this activity before, but there is no plan or schedule for this process.

4.2.2 Formal-Formal TVET Programme: Dual Professional-Technical Secondary Education (EMTP-D)

Introduction

Dual Professional-Technical Secondary Education (*Educación Media Técnico Profesional Dual,* EMTP-D) is one formal programme within technical-professional education in Chile. It is considered to be formal because of the high level of standardisation in its curriculum and the fact that the requirements are defined by the General Law of Education (Ley General de Educación No. 20.370 de 2009). This programme is highly similar to EMTP-T. In the same way as EMTP-T, the programme is offered in schools; is structured in terms of learning objectives, learning time, and learning support (from a trainer or instructor); and results in formal recognition (a bachelor's degree in secondary education). This programme differs from EMPT-T in the training time at the company. According to the Ministry of Education, EMTP-D as well as EMTP-T are both “curricular strategy” of the National strategy for technical-professional formation. Although EMTP-D is a new programme with low enrolment, it is an important programme that has potential to expand. In the following Table 8, we present key facts about this programme.

Table 8: Facts About the TVET Programme: EMTP-D

Short title of indicator	
VET pathway enrolment share of all upper secondary	4.04% in 2018 (Ministerio de Educación, 2019) *(19,892 of 492,195 students*)
Programme enrolment share of entire VET pathway	11.28% in 2018 (percentage of students in EMTP-D with respect to all students in technical secondary education) (Ministerio de Educación, 2019) *(19,892 of 176,270 students in technical secondary education)*
Number of curricula/qualifications	34
Share of time spent in workplace (vs. classroom)	Two modalities: • 3 days at school and 2 days at a company

[25] See https://www.cned.cl/sites/default/files/marco_nacional_cualificaciones_chile.pdf.

	• 1 week at school and 1 week at a company. 54.7% (in 2018) of a total of 4,706 hours: • 2,128 hours per year of on-the-job-training (for students with full-time work)[26] • 2,128 hours per year of general training (for students with full-time work) • 450 hours of professional practice[27] after 2 years of training.
Work contract (yes/no)	No
Share of vocation-specific content (vs. general content) in classroom education	22 hours per week
Classroom/workplace sequencing (alternating, sequentially)	Alternating
Frequency of workplace learning (annually, semi-annually, quarterly, monthly, weekly)	Weekly
Programme duration (years)	2 years
Involved actors	• Ministry of Education • Secretary of Technical-Professional Training • Private supporters with public financing • Agency for the Quality of Education • Superintendence of Education • National Education Council
Reforms summary	• Regulation of qualifications and promotions (2001) • Compulsory secondary education (2003) • Curricular reform of EMTP (2006) • Regulation of programme application (2016) • National strategy for technical-professional formation (2016)

Source: own elaboration

Dual training is a curricular model that brings together the education system and the employment sector. Dual training in Chile originated from an initiative of the German Technical Cooperation Agency in 1992. This initiative started with a 10-year cooperation agreement between Chile and Germany (Corporación SOFOFA, 2014). Until 2001, dual training was mainly implemented under the Chilean-German cooperation agreement. After 2001, the Ministry of Education took responsibility for dual education, creating regulations for the programme within schools and workplaces. The regulation of dual education started in 2016 with Resolution Number 1,385.[28] This resolution approved the "Dual Vocational Training Strategy Manual" (Corporación SOFOFA, 2014), which introduced requirements

[26] Website: https://www.curriculumnacional.cl/614/articles-34970_recurso_plan.pdf.
[27] Website: https://www.ayudamineduc.cl/ficha/educacion-media-tecnico-profesional-5.
[28] Website: https://www.leychile.cl/Navegar?idNorma=1088464&idVersion=2017-01-01.

for the implementation of dual education, defined responsibilities, introduced the Dual Commission, and stated the curricular basis of this training based on EMTP-T.

The EMTP-D programme and EMTP-T programme share several characteristics, such as the following:

- Both include two years of differentiated training (third and fourth grades in secondary school).
- To be eligible to enter either programme, students must have completed primary education and the first two years of secondary education. The programmes feature the same types of specialties and majors, are implemented nationwide, and are governed by the graduate profiles specified in the curricular bases of the Ministry of Education (Unidad de Educación Media Técnico-Profesional, 2018).

The dual programme is governed by the official curriculum of the differentiated cycle of the Ministry of Education, and it must comply with the time distribution for the three modules: general training, differentiated training, and hours of free disposal.

In the dual modality, there are two ways of dividing attendance between educational institutions and companies: 1) a three-day programme with classes at school and two days at the company and 2) weekly alternation, with one week at school and the next at the company. In any case, the labour code[29] states that time at a company cannot exceed 8 hours per day or 30 hours per week (Unidad de Educación Media Técnico-Profesional, 2018). Students need to complete the required attendance and perform a professional apprenticeship of 450 hours to obtain the technical professional title of "medium level" (Unidad de Educación Media Técnico-Profesional, 2018), although currently there is a proposal to halve the hours of the apprenticeship.[30] This apprenticeship may not be carried out at the same company where the learning process took place; however, 80% of the students do it at that site regardless. The apprentice's performance is reported by the company every two months in accordance with the evaluation guidelines that the school provides (Corporación SOFOFA, 2016). The companies with which this modality is developed must be formally constituted and meet certain requirements[31] (Biblioteca del Congreso Nacional, 2016). In 2018, there were 7,000 companies linked to EMTP-D, most of them medium-sized and private in nature.

In 2018, there were 19,892 students enrolled in dual training (Ministerio de Educación, 2019). The programme allows progress in formal education for any of the alternatives presented by education levels 5 (ISCED, level 5) and 6 (ISCED, level 6) of the UNESCO Standardized Teaching Classifier. However, there are no pre-established routes between secondary and tertiary education establishments, except in specific cases.

Education and Training Providers

The distribution of students in the EMTP-D programme according to the types of school providers is the following: 53.5% of students are affiliated with public schools, 21% with private subsidised schools, 0.14% with private non-subsidised schools, and 25.3% with schools with delegated administration (Ministerio de Educación, 2019).

[29] Article 13 of the Labour Code, No. 34, Letter C.

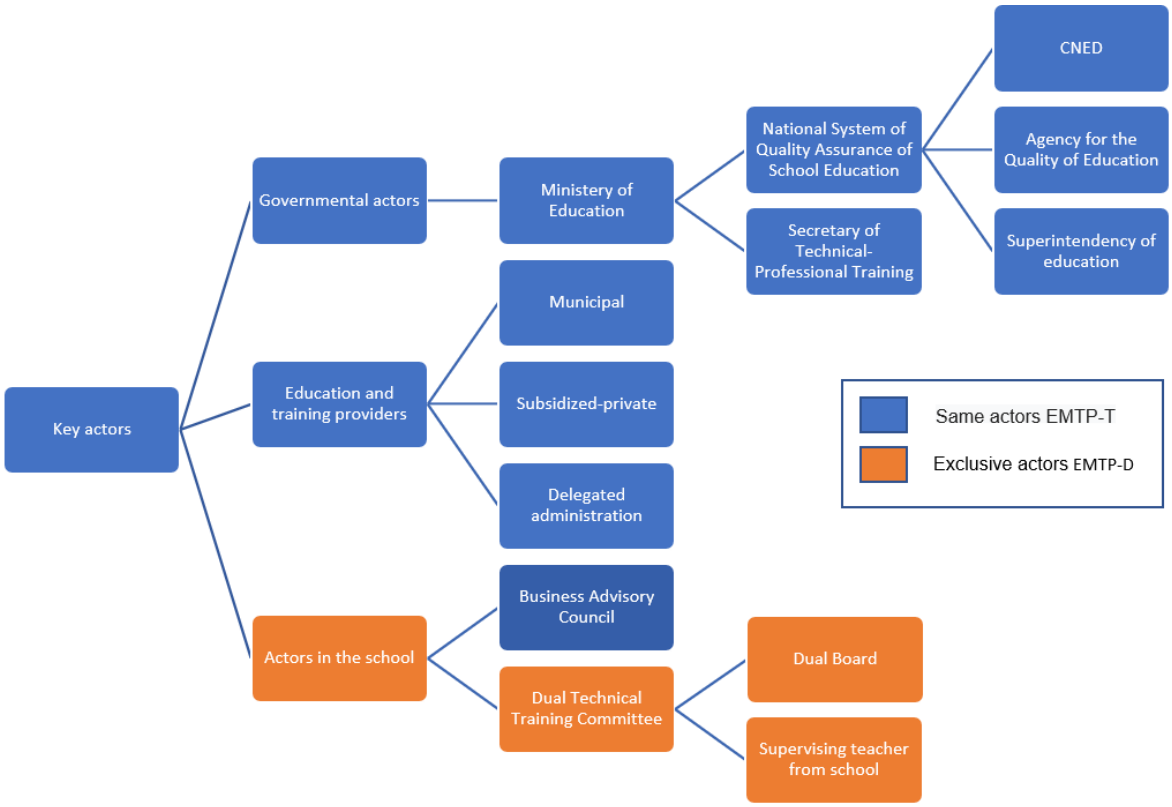
[30] Information from one interview with the EMTP coordinator at the Ministry of Education.

[31] For example, vacancies for apprentices cannot exceed 10% of the employees of the company, which needs to have the necessary equipment to comply with the student trainee rotation plan, and companies cannot provide employment contracts for students (Biblioteca del Congreso Nacional, 2016).

Key Actors

The key actors in EMTP-D programme are highly similar to those in EMTP-T. Figure 6 depicts the key actors involved in this programme and differentiates them from those involved with the EMTP-T programme.

Figure 6: Key actors of EMTP-D



Source: own elaboration, 2018.

Actors in the School

The largest difference from EMTP-T is that companies have more importance in this programme, meaning that educational institutions maintain an active and permanent link with them (Corporación SOFOFA, 2016).

a. Dual technical training committee: Schools must have a dual technical training committee before they start training students. This committee should be composed of representatives of companies and representatives of the education system. It is responsible for defining the guidelines for the operation of the education establishment, such as internal regulations, the distribution of functions, and so on (Corporación SOFOFA, 2016). This committee also works with the CAE for coordination activities.

For the dual programme, the teacher (at school) and the “guide teacher” (at the company) are responsible for guiding, leading, and strengthening learning in a complementary way between the school and the company. Guidance approaches and the division of responsibilities are defined in the apprenticeship plan, which is elaborated based on the curricular bases and study programmes of the technical-professional differentiated formation.

- *Supervising teacher at school*: The teacher at the school assumes responsibility for supervising, guiding, and leading the students in their training process at the company. This person also supports students in their transition to work (Ministry of Education, 2018b).
- *Dual board guide teacher*: An employee from the company is selected to be a guide teacher for apprentices within the organisation. The guide teacher is usually a person recognised as an expert in his or her specialty, has completed enough education to train, and has leadership skills. This person is in charge of teaching specific tasks and training students to perform a function at the company (Ministry of Education, 2018b).

Finance

The financing model is the same for EMTP-D as for EMTP-T. The amounts allocated to this programme are difficult to estimate, since they are not explicitly listed in the government budget (Unidad de Educación Media Técnico-Profesional, 2018).

Curriculum Development

Curriculum Design Phase

The curriculum of technical-professional differentiated training is the same as in the traditional modality. Students complete a total of 42 weekly hours, 14 hours of which comprise general training, 22 hours of which comprise differentiated training, and six hours of which constitute free disposal for the establishment to implement the educational project. The main differences between the two programmes are that the dual professional training must comply with the study plan and that students must spend two hours a week on reflecting on their learning experience at the company (Biblioteca del Congreso Nacional, 2016). Another difference is that the curriculum for the specialties and majors can be implemented with greater flexibility, as long as the respective graduation profiles are taken into consideration (Corporación SOFOFA, 2016). This flexibility allows the educational institution to develop the modules in collaboration with companies and, therefore, to adapt the training to their needs. The qualification standards are explained below:

- Qualification standards: A syllabus is generated at the organisation or company. The educational institution performs a curricular analysis of every module in the syllabus, determining the learning outcomes to teach at the high school, as well as at the organisation or company. The analysis includes evaluation criteria and general learning objectives.
- Examination Form of Qualification Standards: This is the same as in EMTP-T. There is no permanent review instance.
- Quality of employers' involvement in the process: Employers' involvement in the process is the same as in EMTP-T (see more in section 4.2.1).

Curriculum Application Phase

In dual training, learning occurs by alternating theoretical classes in an educational institution with practical training at a company. Until 2016, there was no rule that specified a minimum percentage of attendance at school and at the company; the guidelines were left to each dual EMTP school. Some establishments operated with only a few days a year of training at the company, while others

opted for up to 97% of training at the company (third and fourth levels in secondary education). After the approval of Resolution No. 1,385 of the Ministry of Education, the educational establishment has had to select one of the following options:

a) Full alternation: All training in the specialty is carried out through the dual system in the last two years of the secondary level of education.

b) Partial alternation: Learning alternates depending on the nature of the specialty programme, which may include some modules during the last two years of the secondary level of education or some modules in the last year of professional-technical differentiated training (Biblioteca del Congreso Nacional, 2016).

The most recent reform (2016) allows for two means of splitting the training. With the first, the apprentices attend weekly classes at a learning establishment for three days and participate in in-house training at the company for two days. A second model involves the apprentice alternating between the learning establishment and company on a weekly basis. Each establishment, in agreement with the companies, must choose the model that best suits it (Corporación SOFOFA, 2016). More details about the curriculum application phase for the EMTP-D programme are explained below:

- Learning place: In the dual learning programme, learning alternates between school and the workplace (e.g., companies, corporations, foundations, or public organisations). The framework for the graduation profile relies on the curricular bases, plans, and study programmes of the professional-technical differentiated training.
- Workplace training regulation: The *Strategic Manual for Dual Professional Training* establishes the specifications for the training in the workplace and educational institution.
- Cost sharing: Unlike the EMTP-T programme, the dual programme allows for cost-sharing between the company and the school through the provision of machinery and facilities where young people learn.
- Equipment provision: Equipment is provided by the company during the period of in-house training.
- Teacher provision: This element is the same as in EMTP-T (see more in section 4.2.1).
- Teacher/trainer education: This element is the same as in EMTP-T (see more in section 4.2.1).
- School management: This element is the same as in EMTP-T (see more in section 4.2.1).
- Examination: To evaluate an apprentice's performance, teachers ask tutors to report on the progress of the student a minimum of two times per semester. This reporting is done by using an evaluation instrument designed by the dual board of the educational institution. The teacher grades the student based on this report and writes his or her marks in the class book, along with the marks from the module teacher. Graduation is regulated by the Decree of Evaluation for Technical-Professional Secondary Education.

Curriculum Feedback Phase

Professional-technical training (ISCED, level 3.B) does not have any specific instrument for quality assurance. However, there is a mechanism for collecting feedback on the curriculum, and the CAE handles this task. Hence, educational establishments receive feedback through the CAE, leaving the

CAE playing a critical role within the curriculum feedback phase (Corporación SOFOFA, 2016). More details about the curriculum feedback phase for the EMTP-D programme are explained below:

- Information gathering: This element is the same as in EMTP-T. The productive sector participates only as an advisory agent.
- Frequency of updates: This element is the same as in EMTP-T. In 2013, the new curricular guidelines for professional-technical training were approved, and the plans and programmes for specialties were created on that basis. There are no regular updates, but the guidelines have been developed based on the decisions of the acting government. The last major update to the guidelines was the National Qualifications Framework, but its implementation is not enforced.

4.2.3 Non-Formal-Non-Formal TVET Programme: Apprentice or Training in the Workplace

Introduction

What was once known as the Apprentice Programme (*Programa Aprendices)*, changed this name in March 2019 to Training in the Workplace (Ministerio de Desarrollo Social, 2019). This programme is considered part of the non-formal education sector in Chile because it corresponds to the programmes offered by the National Training Service (SENCE). The programme is funded by the state, but its implementation is outsourced to organisations that provide training courses. Its objective is to provide training to young people with low chances of employability or to young people at risk of unemployment. In contrast to other options, this programme does not guarantee the continuation of education in the formal system, despite the facts that it features a written syllabus with established objectives and offers certified degrees.

The Training in the Workplace or Apprentice Programme is a dual training programme that was implemented in Chile in 2006 by the SENCE. The training process is based on two components: a theoretical one and a practical one. The latter implies the possibility of obtaining work experience from a company (SENCE, 2017a).

Training in the Workplace should be between 15 and 25 years old.[32] Those under the age of 18 must obtain parental consent. In addition, apprentices must be in secondary education, and their working hours cannot prevent them from attending classes at school (SENCE, 2017b). All trainees must have a signed learning contract,[33] with a minimum duration of six months and a maximum of two years. In 2017, the programme opened 1,500 spots for apprentices. Some entry requirements for companies

[32] Unless the apprentice has a proven disability, in which case the maximum application age is 26 years (SENCE, s.f.) or no age limit (SENCE, 2017a).
[33] Regulated by Article 78 of the labour code.

to take part in the programme are as follows: They must be first category taxpayers[34] and must have a legal status, meaning that they must be registered in the Registry of Public Fund-Receiving Entities of the SENCE.[35] In addition, the apprentice must have started working at the company at least 20 business days prior to the application and must receive a monthly salary greater than the minimum wage, but less than two minimum wages[36] (SENCE, 2017a).

This programme runs parallel to the education system, but due to age requirements, students should be studying between the first cycle of secondary education (ISCED, level 2) and higher education (ISCED, level 6). The programme gives priority to those who have educational backgrounds in technical training, and particularly to graduates or students enrolled in EMTP and to graduates of other SENCE programmes, such as "+ Capable" and "Training in Trades" (see Table A2, specially programmes "h" and "i") (SENCE, 2017b).Training can be provided by a Technical Training Organisation (OTEC), whose course must be authorised by the SENCE. A second type of training can be evaluated by the submission of an internal report by a company employee or paid external facilitator. The training is geared towards the needs of the company but should be related to the productive sector in which it operates. In each case, the training must have a duration of at least 80 hours and must be completed on working days (SENCE, 2017b). To obtain certification, the apprentice must have an attendance rate of at least 75%. The same requirement is needed for the company to receive the bonus for the training. Certification is awarded when the apprentice's work contract ends (SENCE, 2017b). There are no progression routes from this programme to continue studying. In the following Table 9, we present a summary of facts about this programme.

Table 9: Facts About the TVET Programme: Apprentice or Training in the Workplace

Short title of indicator	
VET pathway enrolment share of all upper secondary	n/a
Programme enrolment share of entire VET pathway	No
Number of curricula/qualifications	24: 1. Administration 2. Agriculture 3. Farming 4. Food, gastronomy, and tourism 5. Arts, crafts, and graphic design 6. Applied sciences and techniques 7. Commerce and financial services 8. Computing 9. Construction 10. Ecology 11. Education and training 12. Electricity and electronics 13. Aquatic species 14. Forestry

[34] In Chile, taxpayers are taxed in the first or second category according to the type of income they obtain. First category: income from capital and commercial, industrial, mining, and other companies. Second category: work income. See http://www.sii.cl/preguntas_frecuentes/renta/001_002_1711.htm.

[35] Registration of private entities that can receive public resources. Website: http://receptores.sence.cl/.

[36] The minimum wage is the minimum amount of compensation that an employer is obliged to pay employees for the work they have done during a given period. Website: https://www.ilo.org/global/topics/wages/minimum-wages/definition/lang--es/index.htm.

	15. Languages and communication 16. Automotive mechanics 17. Industrial mechanics 18. Mining 19. Industrial processes 20. Health, nutrition, and dietetics 21. Service to people 22. Transport and telecommunications 23. Nuclear energy
Share of time spent in workplace (vs. classroom)	Yes
Work contract (yes/no)	Yes
Share of vocation-specific content (vs. general content) in classroom education	Only differentiated formation
Classroom/workplace sequencing (alternating, sequentially)	Alternating
Frequency of workplace learning (annually, semi-annually, quarterly, monthly, weekly)	80 hours
Programme duration (years)	6 months to 2 years
Involved actors	Ministry of Labour and Social Security SENCE UPCC (Competency Certification Programme Unit) Regional directors

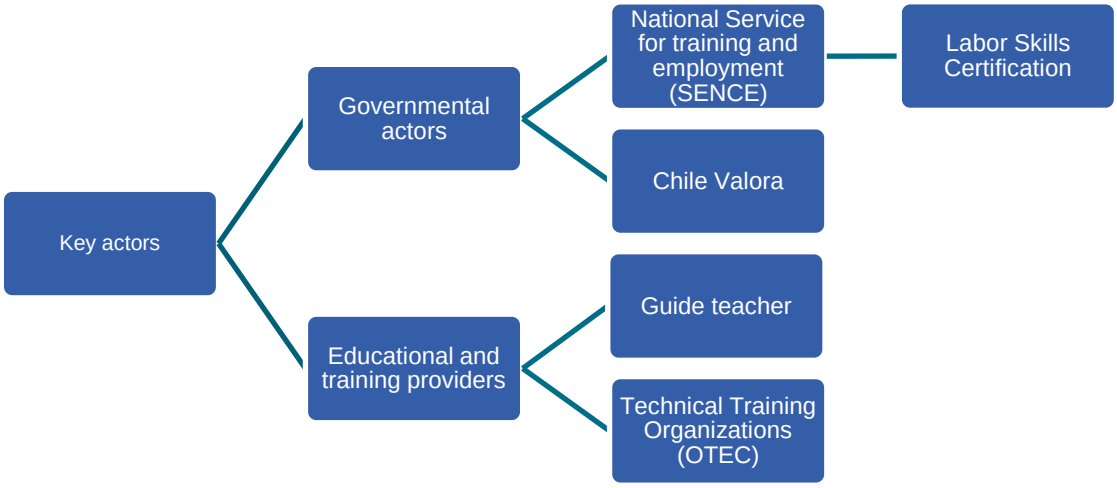
Source: own elaboration

Key Actors

The key actors of the Training in the Workplace Programme are of two types. First, there are governmental actors who act through the Ministry of Labour and Social Security. Second, there are private actors such as OTECs or other companies that offer training courses. The keys actors of the Training in the Workplace Programme are shown in

Figure **7**.

Figure 7: Key Actors of the Training in the Workplace Programme



Source: own elaboration, 2018.

Governmental Actors

a. National Service for Training and Employment

The apprenticeship programme depends on the SENCE. The SENCE is a technical body established in 1976 with the aim of increasing the employability of people through strategies for improving the productivity of companies. This governmental agency communicates with the government through the Ministry of Labour and Social Security (SENCE, 2018a).

- Labour Skills Certification: Within the SENCE, there is the Competency Certification Programme, which is responsible for managing the programme at the national level, together with the regional directors. The role is to manage resources and design the programme, as well as to administer its implementation and evaluation. For this programme, different institutions express their interest in the evaluation and certification of candidates, through evaluation centres accredited by Chile Valora (SENCE, 2019).

b. Chile Valora

The Labour Skills Certification System is a public policy established by Law No. 20,267 in 2008. The system is driven by the Labour Skills Certification System Board, Chile Valora, and the Ministry of Labour and Social Security. This law states that the main role of Chile Valora is “formal acknowledgement of the working competencies of people”. The law applies regardless of how these competencies were acquired and whether the workers hold a qualification or academic degree granted by a formal education institution.

Education and Training Providers

a. Technical Training Organisations

The OTECs are responsible for delivering the training. Other institutions able to function similarly as OTECs are universities, professional institutes, and technical training centres that are registered for that purpose with the SENCE and that are recognised by the Ministry of Education (SENCE, 2004). According to current regulations, apprentices must have a contract with the company (SENCE, 2017b).

b. Guide Teacher

The guide teacher must be a worker designated by the company to guide the apprentices' training. The guide teacher must have skills related to the transmission of knowledge, relationships, and the supervision of the apprentice (SENCE, 2017b).

Finance

The Training in the Workplace programme is financed through the Budget Law[37] by the Ministry of Labour and Social Security, specifically for the National Training and Employment Service[38] (SENCE,

[37] The Public Sector Budget Law consists of a financial estimate of income and an authorization of expenses for a given year in a country. It exists because available resources must be compatible with the achievement of previously determined goals and objectives (Centro de Estudios Libertad y Desarrollo, 2011).

2017a). The designated amount for this programme appears under the category “Training Programme in the Workplace”. In 2017, this programme received 1,101,214,000 CLP (1,516,192.61 USD in 2019) for its implementation (Ministerio de Hacienda, 2017). However, we must consider that the line of work that finances the programme has other expenses as well, so there might be discrepancies between the amount available and the amount spent. For example, in 2016 the Training in the Workplace programme received a budget of 2,417,716,000 CLP, of which only 1,580,714,000 CLP (2,176,386.14 USD in 2019) went towards the apprenticeship programme (SENCE, 2017a).

The strong point of the programme is that it has been designed to finance the entire training of the employee, while the SENCE finances 50% of the minimum wage. However, the apprentice must be hired at a salary that is between one and two minimum wages (SENCE, 2017b). This means that to make up the difference, the employer has to pay between 144,000 CLP (198,265 USD in 2019) and 288,000 CLP (396,529 USD in 2019) per month during the in-house training period, which lasts a maximum of 12 months. This amount results in an annual total of 1,728,000 CLP (2,379.202 USD in 2019) to 3,456,000 CLP (4,758.403 in 2019). Apprenticeship training by a technical training agency or internal course can costs up to 400,000 CLP (550.744 USD in 2019). The value of the training time is calculated at 5,000 CLP (6.88 USD in 2019) per participant (SENCE, 2017b).

Curriculum Development

Curriculum Design Phase

The employer must choose the course to be completed by the apprentice, taking into consideration the needs of the company. If none of the courses taught by the OTECs apply, the employer can provide an in-house course with a guide teacher who is an employee with at least one year of service. In this case, when applying to the programme, the employer must submit the contents of the course beforehand (SENCE, 2017b). Because courses must be taught by registered OTECs, the training is accredited by the SENCE. The qualification standards are explained below:

- Qualification standards: In the case of the Apprentice Programme, there is no unified curricular plan. The National Training and Employment Service has a number of registered training courses, sorted by sector and economic sub-sector. Currently, 20 sectors and 62 sub-sectors are included, totalling more than 600 courses taught by 2,758 OTECs registered throughout Chile (SENCE, 2018b).
- Examination Form of Qualification Standards: Administering the examinations is the responsibility of the SENCE under the framework of Chile Valora’s competencies.
- Quality of employers’ involvement in processes: Employers participate in the process, but always under the regulations established by the SENCE.

Curriculum Application Phase

Attendance is monitored with a biometric electronic attendance record system called the Electronic Class Register by the SENCE.[39] The website (https://cus.sence.cl/Account) allows the administration of courses and downloading of attendance certificates.[40] In some cases, companies may request

[39] SENCE website: http://www.sence.cl/601/w3-article-7280.html?_noredirect=1.
[40] A document that certifies the student’s course attendance.

manual attendance recording with the identity cards of the attendees, but this choice has to be justified and approved by the respective regional SENCE office (SENCE, 2017b).

- Learning place: The place of learning is not specified and depends on who teaches the course (the same company or an OTEC). The training must be done within the working day and lasts a minimum of 80 hours. To pass the training, the apprentice must achieve 75% attendance (SENCE, 2017b). The company is the place of learning, both for training and for subsequent practical training.
- Workplace training regulation: Courses must be taught by facilitators. In the case of OTEC courses, the facilitators must be registered in the Unified Register of Facilitators. In that registry, people enter their background information to be evaluated. Once approved, an individual can teach a module within the courses financed by the SENCE (SENCE, 2016). An in-house course can be taught by a company employee with a contract and a certificate of seniority issued by the company (SENCE, 2017b). In addition to the training, apprentices must be accompanied by a guide teacher in their apprenticeship at the workplace. The tools and study materials depend on the place where the training is done. They also depend on the individual, the OTEC or the company providing the training, and the study objectives.
- Cost sharing: If the company is selected to be part of the programme, the SENCE commits to the partial financing of the apprenticeship (i.e., the training bonus). This bonus can be a maximum amount of 400,000 CLP designated for training or internal reporting. The amount is paid to the company in a single instalment, in addition to 50% of the minimum wage[41] for a maximum of 12 months (SENCE, 2017b).
- Equipment provision: The necessary equipment is provided by the company.
- Teacher provision: The SENCE is responsible for providing teachers.
- Teacher/trainer education: The SENCE is responsible for teacher training.

Examination: The training is evaluated by the SENCE to see if it meets the requirements.

Curriculum Feedback Phase

The SENCE carries out satisfaction surveys for each cohort of graduates to gather information on their perceptions and satisfaction with the programme. These surveys are also useful for improving the design of the programme and making adaptions to cater to the needs of companies and apprentices (SENCE, 2017a). The net satisfaction of apprentices increased from 75% in 2014 to 77.2% in 2016 (SENCE, 2017a).

[41] Chile's minimum wage is currently 288,000 CLP but has experienced variations in recent years. Therefore, the SENCE contributes 144,000 CLP per month.

5 Conclusions and Outlook

In summary, TVET programmes in Chile differ in terms of structure, institutions, actors, finances, and curricula. In the analysed programmes, companies are involved only in the phase of the curriculum value chain. Chile faces two main challenges: 1) achieving clear training routes between TVET programme offers and academic paths and 2) designing a VET policy that does not change with the rotation of governments. Chile has a four-year presidential political regime, so public policies tend to change over time. These changes prevent greater coordination among the actors that support the TVET system.

The main contribution of this study is the mapping of all kinds of technical and vocational education training in Chile, integrating formal and non-formal programmes, but also the presentation of case studies such as the EMTP-T and EMTP-D programmes, which are formal technical education offerings, and Training in the Workplace, an example of non-formal training.

First, formal education dominates at the national level, and no connections exist between the different levels that are offered at the secondary and tertiary levels. The majority of TVET programmes in Chile are private but are financed through state vouchers. The regulation of formal programmes is mostly financial rather than curricular. Formal programmes fall under the responsibility of the Ministry of Education, which authorises the creation of new curricular offers and supervises institutions. The main characteristics of the formal education system in Chile are wide coverage in terms of enrolment and low participation by the business sector.

Second, non-formal TVET programmes mainly depend on public funding. These programmes have a stronger relationship with the business sector than the formal education system because such programmes directly work with companies. Sometimes, these non-formal programmes represent a demand from a company, while in some cases, they represent a training programme seeking to reincorporate people into the formal sector of the economy. The SENCE is responsible for non-formal education; it depends on the Ministry of Labour and acts under the recently created National Qualifications Framework. Non-formal programmes are usually short. The case study of Apprentices or Training in the Workplace programme represents a model that could be formalised, replicated, and expanded. In this programme, companies are co-supervisors of students, and companies finance training in cooperation with the state by providing tools and employment to young people.

One of the main challenges of this study was to represent the business sector and its participation in TVET programmes. During the collection of information for mapping TVET programmes in Chile, we easily approached actors in the government sector, whereas contact with companies was challenging. We conducted only one interview with a business manager, which means that we do not have much information on the employers' perspective. This limitation may reflect the high distance (or low linkage) between the education system and employment in Chile.

Further Research

In a related study, Caves et al. (2019) measured the linkage (or power sharing) between actors from the education and employment systems of TVET programmes in Benin, Chile, Costa Rica, and Nepal by means of an expert survey.

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Appendix

Appendix A. Asset Mapping of TVET Programmes in Chile

Table A1: Template for Asset Mapping for one Programme

Short title of indicator	Question and reasoning
Title of the programme	Please write the name of the programme
1. Form of education	**O formal** **O non-formal**
2. a) Number of students enrolled in the programme	**Specification**: How many students are enrolled in this programme in a given year? Please state enrolment in absolute numbers, no percentages.
	Reasoning: In general, the number of students in a specific programme is a good proxy for its importance, as it tells how many students can be reached by the programme.
2. b)Optional: Number of students who completed programme	**Specification:** How many students graduate from this programme in a given year? Please state graduation in absolute numbers, not in rates.
	Reasoning: Helps understanding successfulness/effectiveness of programme.
3. Duration of the programme	**Specification:** How long does the programme last (typically)? Duration of the programme in weeks/months or years; indicating a range is better than setting an arbitrary mean.
	Reasoning: The duration of a programme may say much about its quality. We include this indicator to help demarcating TVET programmes from training programmes that we would not classify as TVET, e.g. active labour market programmes.
4. Geographical location/spread of the programme	**Specification:** Is it a nation-wide programme or is it geographically restricted? If it is restricted, what is the smallest geographical unit used in your national language to describe the programme's scope?
	Reasoning: It may be helpful to create a map to illustrate the coverage of a programme geographically - e.g. by coloring regions on a map.
5. Age of the average student or typical age-range of students	**Specification:** What is the age of a typical student in the programme? OR: How old are the students in the programme on average?
	Reasoning: This information can help disentangling certain vocational programmes from TVET, e.g. from training in the course of active labour market programmes. This may be an important criterion when selecting programmes.

6.	**Main function/purpose of the programme**	**Specification** - Initial education and training - Continuing education and training - Labour market integration: from unemployment to employment in formal sector - Labour market integration: from informal to formal sector employment - Poverty alleviation - Increase share of people with formal education, formalize the education system - Other: specify!
		Reasoning: This indicator helps to identify TVET programmes and to delineate it from other programmes, such as active labour market programmes.
7.	**Target group of the programme**	**Specification** - Youth - Women - Disadvantaged groups (e.g. from excluded ethnicities) - Informal sector workers - Returnee migrants who have been working abroad - People affected by environmental disaster or war - Other: specify! - No specific target group
		Reasoning: Same as before.
8.	***Prior education needed to enter programme and other entry requirements***	**Specification:** What is the type and level of education (e.g. primary education) that is needed to be able to enter the programme? If possible, please also mention the name of the degree that is needed to enter the programme. - Are there other entry requirements or maybe requirements that have to be fulfilled in addition to a completed degree? If yes, please also state these here! - For example, for the CQP programme in Benin, students only need to have 5 years of education (with or without degree), need to be at least 14 years old, must have worked for at least half a year in a workshop along with a master.
		Reasoning: This indicator has several aspects. First, it helps to position a programme within the formal education system. In case of informal programmes, this indicator nevertheless helps to get an idea of the position of these programmes in relation to the formal education system. Second, this indicator also says something about the potential of the programme to improve the educational background of the students and thereby their labour market situation, which is one of our criteria for the selection of programmes. For example, if a student, who has not finished primary school, participates in a training programme that helps him improving his chances of finding a job and probably provides him the opportunity for further education in the formal educations system, this effect
9.	***Number of curricula covered by the programme***	**Specification:** Are there curricula for the programme? If yes, how many curricula are there? Are they available in written-from? If possible, please list all sectors and/or trades for which curricula are offered.

	- For which sectors and/or trades does the programme have curricula? Please specify these!
	Reasoning: The number of curricula tells something about the importance of the programme in terms of scope. Knowing the distribution of curricula across sectors and/or trades can help to identify further programmes (e.g. by searching in sectors for that no programme has been discovered so far).
10. Percentage school- and work-based training	**Specification:** What share of the overall time in education and training do students spend in school and what share in the workplace?
	Reasoning: This indicator helps us understanding the nature of the programme.
***11.* Examination at end of programme**	**Specification:** Is there an examination that marks the end-point of the programme? Is it a formal, officially recognized exam? - If no formal examination exists, is there any other way in which the skills of the students are assessed at the end of the programme? What serves as a "standard" for the evaluation (if there is one)? Who tests the skills of the students?
	Reasoning: This indicator reveals whether or not there is a curriculum for the programme setting standards for the student's skills. This is an indicator to determine the quality and degree of formality of a programme.
12. Progression routes from programme	**Specification:** Does the programme allow progressing in the formal education system? What is the name of the awarded degree upon completion? If the programme does not provide access to the formal education system, does it provide access to informal programmes? What is the name of the programme to which it is possible to transfer?
	Reasoning: This indicator helps understanding whether or not the programme is formal, it is effective in helping getting access to other formal programmes and to find other (formal or informal) programmes.
***13.* Accreditation of programme**	**Specification:** Is the programme accredited? Which body does the accreditation and what kind of body is that (independent, public, private)?
	Reasoning: Assessing whether or not the programme is accredited by some formal body is an indicator to determine the quality and degree of formality of a programme.
14. Implementation of the programme	**Specification:** Who is responsible for the implementation of the programme?
	Reasoning: Helps identifying one of the main actors in the programme.
	Specification: Does the majority of the training firms pay taxes and social security contributions for their employees?

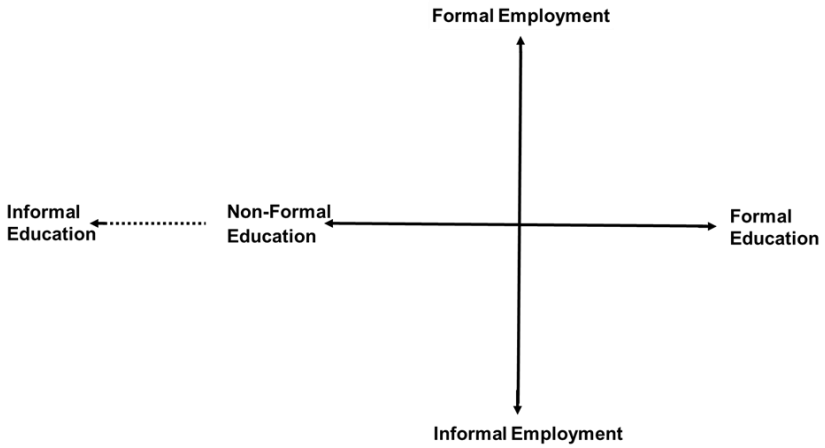
15. Formality of firms in which training takes place	**Reasoning:** With this indicator, we can assess the degree of formality of a programme.
16. Formality of the programme	**Specification:** - Is the programme structured in terms of learning objectives, learning time or learning support (from a trainer, instructor or teacher) and typically leads to a formal recognition (diploma, certificate)? - Does the programme entail planned activities not explicitly designated as learning (in terms of learning objectives, learning time or learning support)? Does it lead to a formal degree that allows to progress within the formal education system? - Does education and/or training in the programme result from daily life activities related to work, family or leisure? Are these activities intentional or structured in terms of objectives, time or learning support? Does the programme lead to a formal degree?
	Reasoning: With this indicator, we can assess the degree of formality of a programme.
17. Insert graph of quadrant category programmes	**Specification:** Please place the programme in the position in the quadrant that you think best corresponds to its degree of formality. 
	Reasoning: With this indicator, we can assess the degree of formality of a programme.

Table A2: Overview of All Programmes of the Asset Mapping of Chile

Category	Name of the programme	Institutions involved	Missing info
Formal-Formal	a. Traditional Professional Technical Secondary Education (EMTP-T) "Educación Media Técnico Profesional Tradicional" *It is a formal programme within the educational offer of secondary education in Chile. The qualifications awarded are oriented to trades demanded by established companies.*	• Ministry of Education • Secretariat of Technical Education • Private supporters with public financing • Agency for the Quality of Education • Superintendency of Education	
Formal-Formal	b. Dual Professional Technical Secondary Education (EMTP-D) "Educación Media Técnico Profesional Dual" *A formal programme within the educational offer of secondary education in Chile. The qualifications awarded are oriented to trades highly demanded by established companies. At the same time, the companies where they carry out the training are formal.*	• Ministry of Education • Secretariat of Technical Education • Private supporters with public financing • Agency for the Quality of Education • Superintendency of Education	
Formal-Formal	c. Higher Level Technician "Educación Superior Técnico Profesional" *ISCED, level 5b. Formal programme and oriented towards obtaining formal jobs for their graduates*	• Ministry of Education • Secretariat of Technical Education • Private institutions with / without public financing • National Council of Education • National Accreditation Council	
Formal-Formal	d. Professional without a degree "Educación Profesional sin licenciatura" *Programmes with a similar profile to Higher Level Technician. Their*	• Ministry of Education • Secretariat of Technical Education • National Council of Education • National Accreditation Council	

		students graduate and join companies in the formal sector.		
Formal-Informal	e.	Adult Professional Technical Secondary Education "Educación Media Técnico Profesional para adultos" *This programme is oriented at adults who need to complete secondary education, where they are also given a technical degree. It is considered formal-informal, since those who are adults and attend this level usually have jobs in the informal sector of the economy.*	• Ministry of Education • Secretariat of Technical Education • Private supporters with public financing • Agency for the Quality of Education • Superintendency of Education	
Non-Formal-Formal	f.	Apprentices Programme or Training in the Workplace "Programa Aprendices" *A programme that offers training for young people within companies.*	• Ministry of Labour> SENCE • The Technical Training Organization (OTEC)	Progression routes from programme b)Optional: Number of students who completed programme
Non-Formal-Formal	g.	Diplomas "Diplomados" *Certificates are a kind of a massive programme in Universities but with little regulation by the State. Their CVs are dissimilar in required hours and intensity, but they are usually oriented to people with jobs and are considered a minor specialization.*	• Ministry of Education • Private institutions	• Number of students who completed programme • Prior education needed to enter programme and other entry requirements • Number of curricula covered by the programme • Percentage school- and work-based training

Non-Formal-Informal	h.	Training programme in trades “Programa de capacitación en oficios” *These are training programmes financed by the State, specifically aimed at young unemployed people or those with precarious jobs*	• Ministry of Labour> SENCE Private institutions with / without public financing • The Technical Training Organization (OTEC)	Progression routes from programme
Non-Formal-Informal	i.	+ Capable Programme “Programa más capaz” *These are training financed by the State, aimed at specific audiences; those who are unemployed or those who work in a situation of informality*	• Ministry of Labour> SENCE • The Technical Training Organization (OTEC)	Age of the average student or typical age-range of students
Non-Formal-Informal	j.	OMIL Strengthening Programme *This programme offers training financed by the State aimed at civil servants.*	• Ministry of Labour> SENCE • The Technical Training Organization (OTEC)	Progression routes from programme
Non-Formal-Formal	k.	Chile Valora *A competence certification system, oriented to people with trades or other training outside the formal educational system*	• Ministry of Labour	Age of the average student or typical age-range of students
Non-Formal-Informal	l.	Peñalolen seamstress cooperative. *A programme that gathers people with a common trade and promotes the organization of these in cooperatives*	• Municipality of Peñalolén • Seamstress Cooperative	

Table A3: Chile Asset mapping

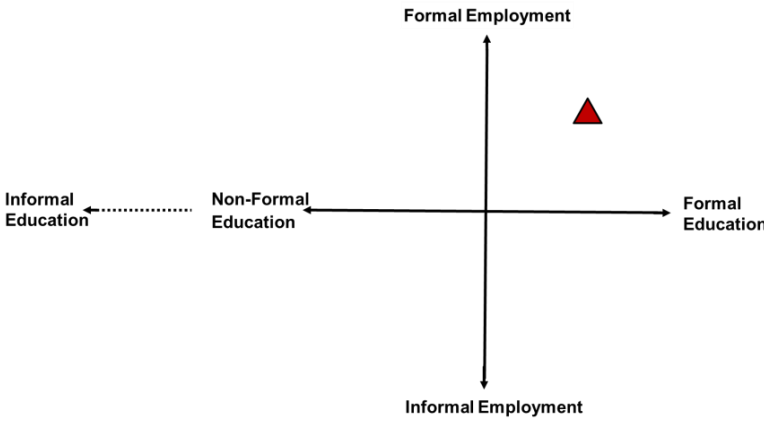
Formal-Formal Programmes

a. *TRADITIONAL PROFESSIONAL TECHNICAL SECONDARY EDUCATION (EMTP-T) "EDUCACIÓN MEDIA TÉCNICO PROFESIONAL TRADICIONAL"*

Short title of indicator	Question and reasoning
Title of the programme	Traditional Professional Technical Secondary Education (EMTP-T) "Educación Media Técnico Profesional Tradicional"
1. Form of education	Formal
3. a) Number of students enrolled in the programme	156,378 students in 2018 (Ministerio de Educación, 2019)
4. b) Optional: Number of students who completed programme	The national average was 76% in 2016 (105,192 young people approximately) (Source: Coordinator of Secondary Technical Professional Education, 2017).
5. Duration of the programme	Two years in school, to which the professional practice is added, which is usually done after completing the educational plan. The practice involves 450 hours of work in a company.
6. Geographical location/spread of the programme	National
7. Age of the average student or typical age-range of students	The age range is between 16 years and 11 months and 17 and 11 months old.
8. Main function/purpose of the programme	Initial education and training
9. Target group of the programme	No specific target groups.
10. Prior education needed to enter programme and other entry requirements	Primary education and second year of high school.
11. Number of curricula covered by the programme	There are 34 specialties, grouped into 15 economic sectors. **Economic Sector** — **Especialidad** 1. WOOD — 1. Logging; 2. Carpentry 2. AGRICULTURE — 3. Agriculture, Livestock and Winemaking 3. FOOD — 4. Industrial Food Processing; 5. Gastronomy Cooking, Pastry 4. CONSTRUCTION — 6. Construction, Completion of Construction Roadworks and Infrastructure; 7. Cooling and air conditioning installations; 8. Sanitary Installations

		9. Industrial Assembly
	5.METAL CONSTRUCTION AND MECHANICAL	10. Automotive Mechanics 11. Industrial Mechanics Machinery 12. Metallic Constructions
	6. ELECTRICITY	13. Electricity 14. Electronics
	7. MARITIME	15. Aquaculture 16. Fishing 17. Crews of Merchant Ships 18. Port Operations
	8. MINING	19. Mining Exploitation 20. Extractive Metallurgy 21. Geology Assitantants
	9.GRAPHIC DESIGN	22. Graphic Design 23. Technical Drawing
	10. CLOTHING	24. Clothing and Textile Production
	11.ADMINISTRATION	25. Human Resources Logistics Administration 26. Accounting
	12. HEALTH AND EDUCATION	27. Child Care 28. Nursing Care Senior Adult Nursing
	13. CHEMISTRY AND INDUSTRY	29. Industrial Chemistry, Chemical Plants and Chemical Laboratories
	14. TECHNOLOGY AND COMMUNICATIONS	30. Connectivity and Networks 31. Telecommunications 32. Programming
	15. HOTEL AND TOURISM	33. Hotel Services 34. Tourism Services
12. Percentage school- and work-based training	10.6% in the workplace (in the year 2018)[42] 89.4% in the school	
13. Examination at end of programme	There is no exam. To graduate, all courses and teaching modules must be passed, in addition to successfully completing the practice in company.	

[42] Website Ministerio de Educación. Unidad de currículum y evaluación plan de estudio 2018. https://www.curriculumnacional.cl/614/articles-34970_recurso_plan.pdf

14. *Progression routes from programme*	The programme allows progress in formal education, to any of the alternatives of education level 5 (ISCED, level 5) and 6 (ISCED, level 6). However, there are no routes between secondary and tertiary education establishments. These agreements suppose a reduction in the academic load but not in the tariffs or total years necessary to finish the level. 46% of the students that finish the EMTP continue in professional careers (Paola Sevilla, 2018).
15. *Accreditation of programme*	Public accredited (Ministry of Education).
16. *Implementation of the programme*	Ministry of Education and private collaborators.
17. *Formality of firms in which training takes place*	High schools can have Business Councils in Secondary teaching lyceums. All the companies they are linked to are formal.
18. *Formality of the programme*	The programme is structured by learning objectives, learning time and learning support. Leads to obtaining the certificate of secondary Professional Technical Education. Its graduates are Medium Level Technicians. The current characteristics of the programme were introduced in the General Education Act 20370 in the year 2009. However, secondary vocational technical education has existed in Chile since the early twentieth century.
19. *Insert graph of quadrant category programmes*	

b. DUAL PROFESSIONAL TECHNICAL SECONDARY EDUCATION (EMTP-D) "EDUCACIÓN MEDIA TÉCNICO PROFESIONAL DUAL"

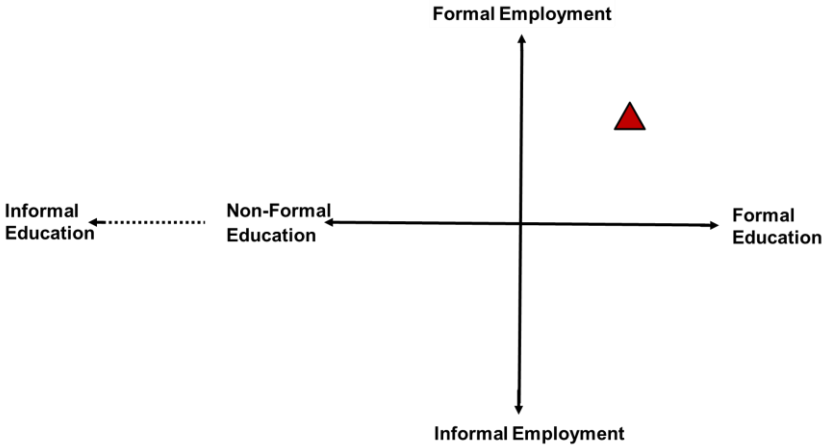
Short title of indicator	Question and reasoning
Title of the programme	Dual Professional Technical Secondary Education (EMTP-D) "Educación Media Técnico Profesional Dual"
1. Form of education	Formal
2. a) Number of students enrolled in the programme	19,892 in 2018 (Ministerio de Educación, 2019)

<table>
<tr><td>3. b) Optional: Number of students who completed programme</td><td>No information</td></tr>
<tr><td>4. Duration of the programme</td><td>Two years, to which a professional practice of 450 hours is added. Currently, there is a proposal to reduce professional practice by half.</td></tr>
<tr><td>5. Geographical location/spread of the programme</td><td>National</td></tr>
<tr><td>6. Age of the average student or typical age-range of students</td><td>The age range is between 16 and 11 months and 17 and 11 months old.</td></tr>
<tr><td>7. Main function/purpose of the programme</td><td>Initial education and training</td></tr>
<tr><td>8. Target group of the programme</td><td>No specific target groups.</td></tr>
<tr><td>9. Prior education needed to enter programme and other entry requirements</td><td>Primary education and second year of high school.</td></tr>
<tr><td>10. Number of curricula covered by the programme</td><td>There are 34 specialties, grouped into 15 economic sectors.
<table>
<tr><th>Sector Económico</th><th>Especialidad</th></tr>
<tr><td>1. WOOD</td><td>1. Forestry
2. Furniture and Terminations in Wood</td></tr>
<tr><td>2. AGRICULTURE</td><td>3. Agropecuaria Agricola Livestock Vitivinícola</td></tr>
<tr><td>3. FOOD</td><td>4. Industrial Food Processing
5. Gastronomy Cooking Pastry and Pastry</td></tr>
<tr><td>4. CONSTRUCTION</td><td>6. Construction Completions of Construction Roadworks and Infrastructure de la Construcción Obras Viales e Infraestructura
7. Cooling and air conditioning
8. Sanitary Installations
9. Industrial Assembly</td></tr>
<tr><td>5.METAL CONSTRUCTION AND MECHANICAL</td><td>10. Automotive Mechanics
11. Industrial Mechanics Machines
12. Metallic Constructions</td></tr>
<tr><td>6. ELECTRICITY</td><td>13. Electricity
14. Electronics</td></tr>
<tr><td>7. MARITIME</td><td>15. Aquaculture
16. Fishing
17. Crew of Merchant Ships and Specials
18. Port Operations</td></tr>
</table></td></tr>
</table>

	8. MINING	19. Mining Exploitation 20. Extractive Metallurgy 21. Assistance in Geology
	9.GRAPHIC DESIGN	22. Graph 23. Technical Drawing
	10. CLOTHING	24. Clothing and Textile Clothing
	11. ADMINISTRATION	25. Human Resources Logistics Administration 26. Accounting
	12. HEALTH AND EDUCATION	27. Child Care 28. Nursing Care Senior Adult Nursing
	13. CHEMISTRY AND INDUSTRY	29. Industrial Chemistry Chemical Plant Chemical Laboratory
	14. TECHNOLOGY AND COMMUNICATIONS	30. Connectivity and Networks 31. Telecommunications 32. Programming
	15. HOTEL AND TOURISM	33. Hotel Services 34. Tourism Services
11. Percentage school- and work-based training	In the workplace: 54.7% (in the year 2018) from a total training of Total training of 4,706 hours: • 2,128 hours per year in the work training in the company (for students with full time work)[43] • 2,128 hours per year in the general training (for students with full time work) 450 hours of professional practice[44] after the two years of training. In the school: 45,2%	
***12.* Examination at end of programme**	No. To obtain the degree of Education Technical Professional secondary it is necessary that just the courses are passed successfully, and a professional practice is carried out.	
13. Progression routes from programme	The programme allows progress in formal education, to any of the alternatives presented by education level 5 (ISCED, level 5) and 6 (ISCED, level 6) of the UNESCO Standardized Teaching Classifier. However, there are no pre-established routes except in specific cases between secondary and tertiary education establishments. These agreements suppose a reduction in the academic load but not in the tariffs or in the total years necessary to complete the level (Paola Sevilla, 2018).	
***14.* Accreditation of programme**	Public accredited (Ministry of Education).	
15. Implementation of the programme	Ministry of Education and private collaborators.	

[43] Website: https://www.curriculumnacional.cl/614/articles-34970_recurso_plan.pdf

[44] Website: https://www.ayudamineduc.cl/ficha/educacion-media-tecnico-profesional-5

16. *Formality of firms in which training takes place*	7,000 companies linked to the modality (Ministerio de Educación, 2014a). All the companies with which it is linked are formal. In the majority private and of medium size.
17. Formality of the programme	The Dual Training is a model of curricular alternation focused on the articulation between education and the productive sector. There are two complementary learning places: the educational establishment and the company. Students can attend three-day programmes at high school and two days in company, or one week at high school and one week in company. The companies receive one or more "apprentices" for 2 years in a row, starting in the 3rd grade, respecting their status as high school students. The model was implemented in Chile in 1992 as an initiative of the German Society of Technical Cooperation (GTZ) and the Government of Chile to strengthen technical education in quality and linkage with the productive world (Ministerio de Educación, 2014a).
18. *Insert graph of quadrant category programmes*	

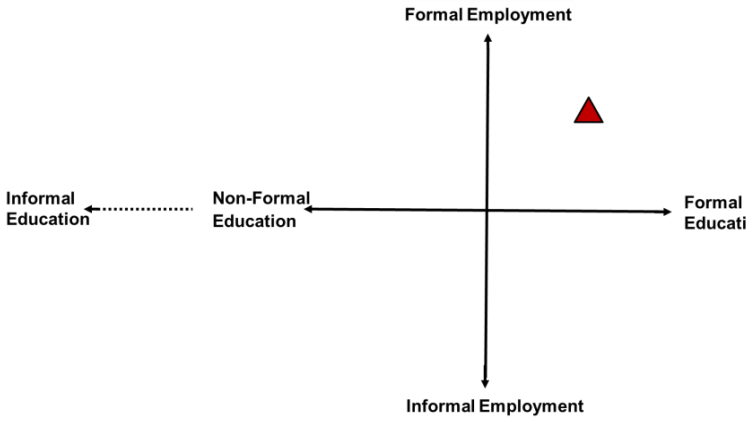
c. HIGHER LEVEL TECHNICIAN "EDUCACIÓN SUPERIOR TÉCNICO PROFESIONAL"

Short title of indicator	Question and reasoning
Title of the programme	Higher level technician "Educación Superior Técnico Profesional"
1. Form of education	Formal
2. a) Number of students enrolled in the programme	353,253 (Base de datos Ministerio de Educación, 2017b).
3. b)Optional: Number of students who completed programme	Non information available
4. Duration of the programme	Average: 4.9 semesters Median: 5 semesters

5. Geographical location/spread of the programme	National
6. Age of the average student or typical age-range of students	Average: 26.6 years old
7. Main function/purpose of the programme	Initiation and/or Continuing education and training
8. Target group of the programme	No specific target group
9. Prior education needed to enter programme and other entry requirements	Completion of secondary education (ISCED, 3.1 or 3.2 level).
10. Number of curricula covered by the programme	Areas of knowledge, sub-areas and corresponding careers for Technical Formation Centres (vocational schools) Source: Prepared by the CNED 2013 Index Database.

Sector Económico	Especialidad
1. WOOD	1. Forestry 2. Furniture and Terminations in Wood
2. AGRICULTURE	3. Agropecuaria Agricola Livestock Vitivinícola
3. FOOD	4. Industrial Food Processing 5. Gastronomy Cooking Pastry and Pastry
4. CONSTRUCTION	6. Construction Completions of Construction Roadworks and Infrastructure de la Construcción Obras Viales e Infraestructura 7. Cooling and air conditioning 8. Sanitary Installations 9. Industrial Assembly
5.METAL CONSTRUCTION AND MECHANICAL	10. Automotive Mechanics 11. Industrial Mechanics Machines 12. Metallic Constructions
6. ELECTRICITY	13. Electricity 14. Electronics
7. MARITIME	15. Aquaculture 16. Fishing 17. Crew of Merchant Ships and Specials 18. Port Operations
8. MINING	19. Mining Exploitation 20. Extractive Metallurgy 21. Assistance in Geology
9. GRAPHIC DESIGN	22. Graph

	23. Technical Drawing 10. CLOTHING — 24. Clothing and Textile Clothing 11. ADMINISTRATION — 25. Human Resources Logistics Administration 26. Accounting 12. HEALTH AND EDUCATION — 27. Child Care 28. Nursing Care Senior Adult Nursing 13. CHEMISTRY AND INDUSTRY — 29. Industrial Chemistry Chemical Plant Chemical Laboratory 14. TECHNOLOGY AND COMMUNICATIONS — 30. Connectivity and Networks 31. Telecommunications 32. Programming 15. HOTEL AND TOURISM — 33. Hotel Services 34. Tourism Services
11. Percentage school- and work-based training	There is a restriction of 1600 hours in the classroom, there is no training in company (with some exceptions).
***12.* Examination at end of programme**	Each establishment has its own evaluation method and submits it to the accreditation process, the minimum that is required is 1600 hours of class, without specifying the characteristics.
13. Progression routes from programme	There are pilot programmes in the Más Capaz (+ Capable) programme (described below) and some CFTs, however, it is not an extended practice.
***14.* Accreditation of programme**	The institutions of ESTP are autonomous. To start a new programme, the institution requests the authorization of operation from the Ministry of Education, and then the CNED. The CNED monitors ~~accompanies~~ the institution for from 6 to 11 years. Once the licensing is awarded, the relationship with the State is via Quality Assurance. Accreditation is defined around the declaration of initial objectives and not with respect to objectives emanating from the Ministry.
15. Implementation of the programme	Public and Private sector.
16. Formality of firms in which training takes place	Formally no relationship is established with companies, as "practices", this is mainly due to the regulation of 1600 hours in the classroom.
17. Formality of the programme	The programme is structured in terms of learning with regular classes. The qualification obtained is that of Higher-Level Technician. The higher level does not allow progress to level 6 (undergraduate) under special criteria, with the exception of specific initiatives between institutions.

18. Insert graph of quadrant category programmes	

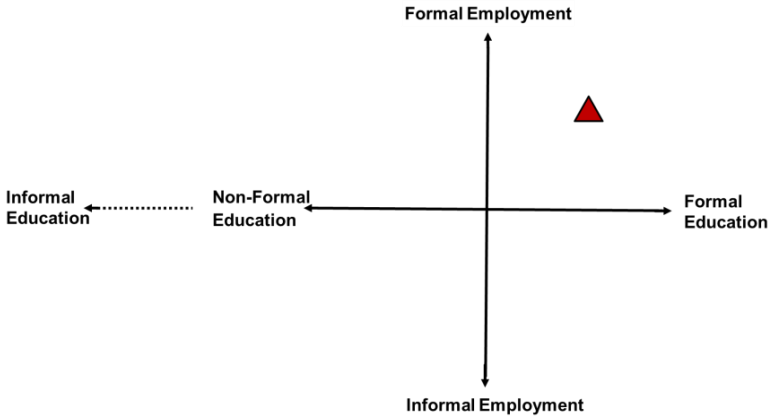
d. PROFESSIONAL WITHOUT A DEGREE "EDUCACIÓN PROFESIONAL SIN LICENCIATURA"

Short title of indicator	Question and reasoning
Title of the programme	Professional without a degree "Educación Profesional sin licenciatura"
1. Form of education	Formal
2. a) Number of students enrolled in the programme	219,110 (Ministerio de Educación database, 2017)
3. b) Optional: Number of students who completed programme	No information
4. Duration of the programme	7.9 semesters average (Ministerio de Educación, 2017b) 8 semesters Median (Ministerio de Educación, 2017b)
5. Geographical location/spread of the programme	National
6. Age of the average student or typical age-range of students	27.7 (average)
7. Main function/purpose of the programme	Initiation and/or Continuing education and training
8. Target group of the programme	No specific target group
9. Prior education needed to enter programme and other entry requirements	Ending secondary education (ISCED: 3.1 our 3.2 levels).

10. Number of curricula covered by the programme

Areas of knowledge, sub-areas and corresponding courses for Professional Institutes
Source: Prepared by the CNED 2013 Index Database.

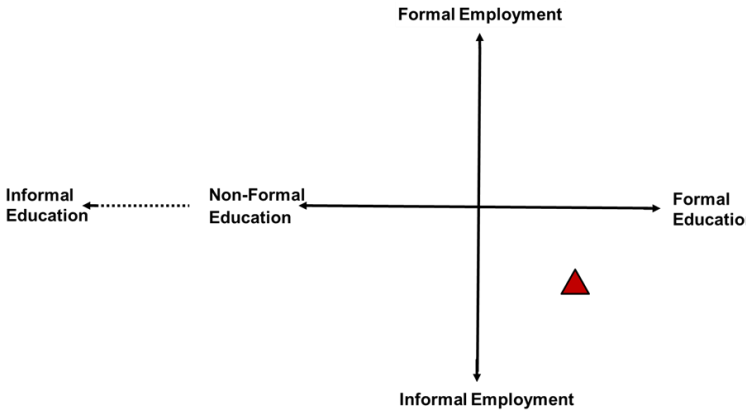
Administration and Commerce	**Administration** **Commerce** **Accounting** **Finance** **Marketing and publicity** **Tourism and hospitality** **Gastronomy, International Cui**
Agriculture, Forestry, Fishing and Veterinary	Agricultural Sciences Forestry
Art and Architecture	Performing Arts Dance Design Illustration Music
Science	Chemistry
Social Sciences	Communication Orientation Journalism and Information? Sociology Social Work
Law	Law Criminology
Education	Sports and Recreation Primary Education Special Education Secondary Education Preschool Education General Education Training
Humanities	Religious Sciences Literature
Health	Nursing Phonoaudiology Kinesiology Nutrition and Diet Odontology Chemistry and Pharmacy Occupational Therapy
Technology	Food Biotechnology Cartography and Civil Works Electrical and Electronics Industrial Logistics and Transportation Mechanics Environment

	Mining Chemistry and Metallurgy Sound and Acoustics Information and Communications Technologies
11. Percentage school- and work-based training	They do not spend time in company = 0%
***12.* Examination at end of programme**	No. It is only necessary to meet the requirements of the programme in terms of passing courses.
13. Progression routes from programme	There are specific cases of progression in institutions that have higher educational degrees (for example, from Engineering in Execution to Civil Engineering), however, it is not an extended articulation practice.
***14.* Accreditation of programme**	Yes, CNED, CNA
15. Implementation of the programme	Public and Private Sector.
16. Formality of firms in which training takes place	The companies where they carry out professional practices must be formal.
17. Formality of the programme	The programme is structured in terms of learning with regular classes.
18. Insert graph of quadrant category programmes	

Formal-Informal Programmes

e. *ADULT PROFESSIONAL TECHNICAL SECONDARY EDUCATION "EDUCACIÓN PARA JÓVENES Y ADULTOS (EPJA)"*

Short title of indicator	Question and reasoning
Title of the programme	Adult Professional Technical Secondary Education "Educación para jóvenes y adultos (EPJA)"
1. Form of education	Formal
2. a) Number of students enrolled in the programme	9,801 students (Ministerio de Educación, 2017b).
3. b) Optional: Number of students who completed programme	Non information available
4. Duration of the programme	Two years
5. Geographical location/spread of the programme	National
6. Age of the average student or typical age-range of students	To enter students must be at least 17 years old by June 30th (Ministerio de Educación, 2018d). The typical age is between 17 and 25 years old. 71.1% of all students are 22 years old or younger.
7. Main function/purpose of the programme	To increase the proportion of people with formal education and formalize the education system.
8. Target group of the programme	People who have dropped out of the formal education system.
9. Prior education needed to enter programme and other entry requirements	To have passed the second year of secondary education, in normal modality or by EPJA.
10. Number of curricula covered by the programme	• AQUACULTURE - Maritime Sector • AGROPECUARIA - Agricultural Sector • CARING FOR ELDERLY ADULTS - Social Programmes and Projects Sector • METAL CONSTRUCTIONS - Metalworking Sector • INDUSTRIAL FOOD PROCESSING - Food Sector • ELECTRONICS - Electricity Sector • ELECTRICITY - Electricity Sector • FORESTRY- Logging Sector • SANITARY INSTALLATIONS - Construction Sector • AUTOMOTIVE MECHANICS - Metalworking Sector • INDUSTRIAL - Metalworking Sector • WOOD PRODUCTS - Wood Sector • COLLECTIVE FOOD SERVICES - Food Sector • HOTEL SERVICES - Hotel and Tourism Sector • TELECOMMUNICATIONS - Electricity Sector
11. Percentage school- and work-based training	The duration of the professional practice period cannot be less than 30% of the workload of the specialty. However, the

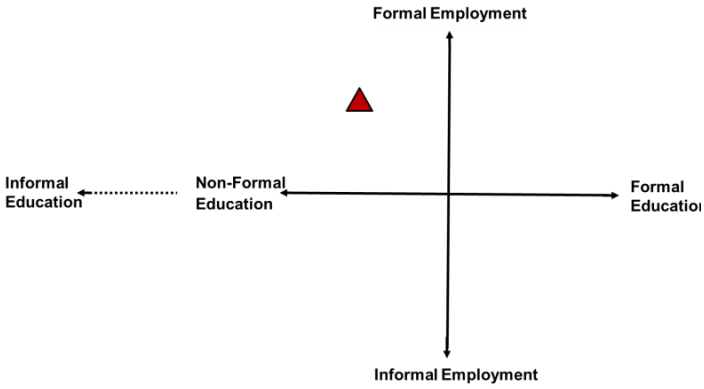
	establishment director can exempt from this requirement the students and students who demonstrate through the evaluation procedure possess the capacities indicated in the graduation profile of the speciality (Ministerio de Educación, 2017b).
12. **Examination at end of programme**	Regarding the course requirements, two fundamental criteria exist: attendance, performance and professional practice. In terms of attendance, a minimum of 80% is required, although the establishment director is authorized to approve students ~~promotion~~ with lower percentages for duly justified reasons. In terms of performance, those who pass all learning sectors gain the qualification.
13. Progression routes from programme	It allows access to any type of higher level programme.
14. **Accreditation of programme**	Public accredited (Ministry of Education).
15. Implementation of the programme	Educational Institutions that have official recognition granted by the respective Ministerial Regional Ministry of Education, holders authorized for that purpose. The types can be: Municipal, Subsidized Private or Paid Individuals.
16. Formality of firms in which training takes place	All the companies with which it is linked are formal.
17. Formality of the programme	The Regular Modality of Adult Education is aimed at young people and adults who want to start or complete their studies, be they Basic, Secondary Humanistic-Scientific or Technical-Professional. The plans and programmes of study of this educational modality are derived from what is stated in the Supreme Decree of Education Nº 257, 2009, which approves the Minimum Obligatory Fundamental and Content Objectives for the education of young and adult people. Technical-Professional secondary education is organized into three levels: The first deals with the learning equivalent to the General Formation of 1st and 2nd year of regular Secondary Education and starts the Technical-Professional Differentiated Training. The second level includes apprenticeships equivalent to the General Education of the 3rd year of Education.
18. Insert graph of quadrant category programmes	

Non-formal-Formal Programmes

f. APPRENTICES OR TRAINING IN THE WORKPLACE PROGRAMME "PROGRAMA APRENDICES"

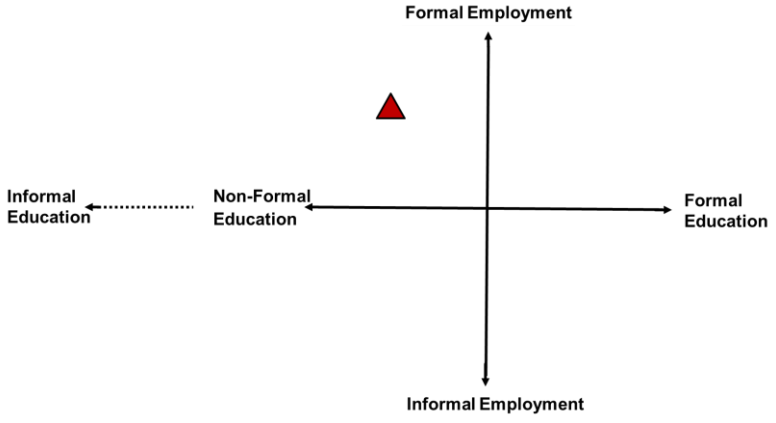
Short title of indicator	Question and reasoning
Title of the programme	Apprentices Programme "Programa Aprendices" till 2017 Current name Training in the Workplace
1. NON-form of education	Non-formal
2. a) Number of students enrolled in the programme	1,190 (contracts for the year 2017) 593 (women) 597 (men)
3. b) Optional: Number of students who completed programme	Non information
4. Duration of the programme	The first bonus component to the company consists in the delivery of 50% of a minimum monthly income for a maximum period of 12 months per apprentice hired. The second component consists of the delivery of a one-off bonus of 400.000 CLP (Chilean currency) to the company, allocated to the training that the apprentice must receive, through an OTEC, or internal rapporteur.
5. Geographical location/spread of the programme	National
6. Age of the average student or typical age-range of students	Over 15 years old and under 25 years old.
***7.* Main function/purpose of the programme**	Encourage the incorporation of young people into the labour market, through a dual training approach and the delivery of bonuses for hiring.
8. Target group of the programme	Have from 15 years and less than 25 years. For people with disabilities, there is no age limit.
9. Prior education needed to enter programme and other entry requirements	Non information.
10. Number of curricula covered by the programme	1. Administration 2. Agriculture 3. Farming 4. Food, Gastronomy and Tourism 5. Arts, Crafts And Graphic Design 6. Applied Sciences and Techniques 7. Commerce and Financial Services 8. Computing and Computing 9. Construction 10. Ecology 11. Education and Training 12. Electricity and Electronics 13. Aquatic Species 14. Forestry

	15. Languages and Communication 16. Automotive Mechanics 17. Industrial Mechanics 18. Mining 19. Industrial Processes 20. Health, Nutrition and Dietetics 21. Service to People 22. Transport and Telecommunications 23. Levelling of basic (primary) and intermediate (secondary) education. 24. Nuclear Energy
12. Percentage school- and work-based training	No information.
***1.* Examination at end of programme**	The only exit requirement is to have 75% attendance.
2. Progression routes from programme	No information.
***3.* Accreditation of programme**	The accreditation is made per person through ChileValora. People attend a sectoral body of labour competencies, which is an accrediting institution specialized in the subject. An accreditation test is carried out and a certificate is obtained. In case of not approving it, a gap report is submitted, which allows to know the deficit and to give it back. The cost is financed by SENCE.
4. Implementation of the programme	• Ministry of Labour through the National Training and Employment Service • Business
5. Formality of firms in which training takes place	• There are 593 companies. These must be First Category taxpayers of Decree Law No. 824, on Income Tax, in accordance with the provisions of article 20 of said legal body. • The taxpayers of article 22 of the aforementioned law, that is, small-scale artisanal miners, small traders who carry out activities on the public highway, the owners of an artisanal or worker workshop, the artisanal fishermen registered in the register established for that purpose in the General Fisheries and Aquaculture Law.
6. Formality of the programme	It is based on dual training, where a person is trained through theoretical components (related education or training) and practical (in-company training). These two components are called the "Learning Plan". The Programme has the double objective of generating employability to the apprentice and productivity to the company and / or productive sector, through the development of competencies that allow the person to carry out an occupation. The company must have a Master Guide, which provides training in the company and additionally must hire a Technical Training Agency (OTEC) or perform an internal rapporteur, so that the apprentice is trained in skills that are not developed on the job.

	A bonus for the hiring is established: The learning contract must have a minimum duration of 6 months, in order to apply for the Programme. 50% of a minimum monthly income is reduced. The company will be rewarded for an amount of up to $ 400,000 (four hundred thousand Chilean pesos) for training carried out through an OTEC or Internal Rapporteur.
7. Insert graph of quadrant category programmes	

g. DIPLOMAS "DIPLOMADOS"

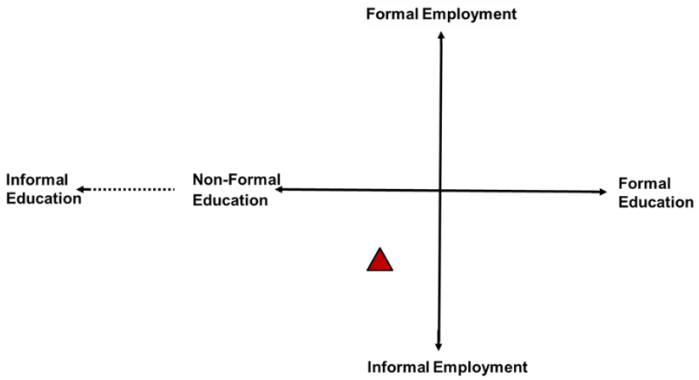
Short title of indicator	Question and reasoning
Title of the programme	Diplomas "Diplomados"
1. Form of education	Formal
2. a) Number of students enrolled in the programme	10,787 (Base de datos Ministerio de Educación, 2017b)
3. b) Optional: Number of students who completed programme	No information
4. Duration of the programme	On average 1.5 semesters (Base de datos Ministerio de Educación, 2017b).
5. Geographical location/spread of the programme	National
6. Age of the average student or typical age-range of students	On average 34.1 (Base de datos Ministerio de Educación, 2017b)
7. Main function/purpose of the programme	Education and ongoing training, however, this programme offer is indicated as one of the most deregulated within the system (information from interviews). In fact, in Ministry of Education there is no department that is specifically responsible for it. Therefore, the offer of courses is very diverse.
8. Target group of the programme	No specific target group

9. ***Prior education needed to enter programme and other entry requirements***	There is no regulation in this regard.
10. ***Number of curricula covered by the programme***	*"I'll give you a piece of information for the cause. The CPEIP decided to eliminate the graduates from their language, because the graduates are not regulated anywhere. As a category it is nothing, it is a hybrid category that gives you everything. For the purposes of the framework we did not put any type "(Interview Coordinator Education Secondary Professional Technician).*
11. ***Percentage school- and work-based training***	No information
12. **Examination at end of programme**	There is no regulation in this regard.
13. ***Progression routes from programme***	It does not allow progression, except in specific cases within the Universities that award higher degrees, where some subjects can be validated.
14. **Accreditation of programme**	They do not have accreditation.
15. **Implementation of the programme**	Higher Education Institutes (Universities or Professional Institutes).
16. ***Formality of firms in which training takes place***	No information.
17. **Formality of the programme**	The graduates could be defined as recipients of certifications of studies that training entities and institutions of higher education provide in relation to certain training programmes generally open to the entire community. The official recognition of the graduates will depend on whether they have been granted by institutions that have official recognition (CNED, 2012)
18. ***Insert graph of quadrant category programmes***	**Specification:** 

Non-Formal-Informal Programmes

h. TRAINING PROGRAMME IN TRADES "PROGRAMA DE CAPACITACIÓN EN OFICIOS"

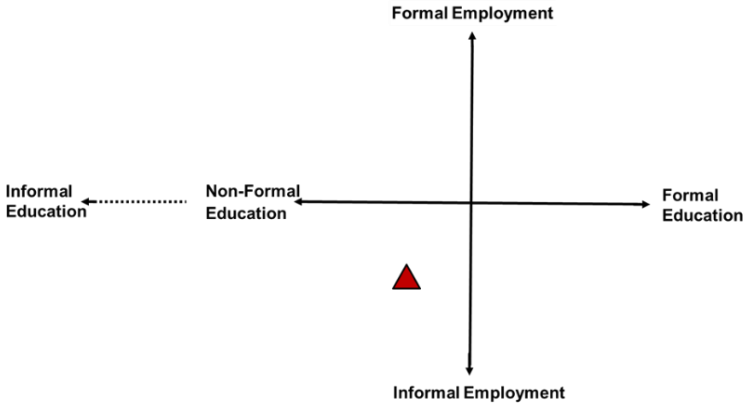
Short title of indicator	Question and reasoning
Title of the programme	Training Programme in Trades Special Registration year 2017 "Programa de Capacitación en oficios"
1. Form of education	Non-Formal
2. a) Number of students enrolled in the programme	15,078 (inscribed 2017) 9,404 (woman) 5,674 (man)
3. b) Optional: Number of students who completed programme	6,185 (graduates to 2017)
4. Duration of the programme	425 (average hours of training)
5. Geographical location/spread of the programme	National
6. Age of the average student or typical age-range of students	People of both sexes, belonging to 60% of the most vulnerable population, according to the current targeting instrument (RSH), aged between 16 and 65 years (64 years, 11 months and 29 days) at the time of applying.
7. Main function/purpose of the programme	Integration into the labour market: from unemployment to employment in the formal sector
8. Target group of the programme	• Must belong to the 60% most vulnerable of the population. • Be between 16 and 65 years old. • Not having completed higher education studies.
9. Prior education needed to enter programme and other entry requirements	With no educational level required, the following are excluded: • People with a complete tertiary education level, taught by Professional Institutes, Technical Formation Centres (vocational schools) and / or State or Private Universities, except for people with disabilities, for whom this requirement does not apply or authorized people under justified conditions. • Those who, when applying, find themselves as regular students in Institutes • Professionals, Technical Training Centres and / or State and Private Universities.
10. Number of curricula covered by the programme	• Training in trades. • Transversal Competencies. • Socio-Labour Support (dependent exit courses). • Work practice for courses with dependent output. • Follow-up phase, for courses with independent output. • Business plan for micro entrepreneurship. • Labour Intermediation (excluded for beneficiaries deprived of liberty).
11. Percentage school- and work-based training	There is no training in company.
12. Examination at end of programme	The only exit requirement is to have 75% attendance.

13. Progression routes from programme	No information
14. Accreditation of programme	The accreditation is made per person through ChileValora. People attend a sectoral body of labour competencies, which is an accrediting institution specialized in the subject. An accreditation test is carried out and a certificate is obtained. In case of not passing the course, a gap report is submitted, which allows for the identification of the deficit and to give it back. The cost is financed by SENCE.
15. Implementation of the programme	• Ministry of Labour through the National Training and Employment Service. • The Technical Training Organizations (OTEC).
16. Formality of firms in which training takes place	There are no companies involved.
17. Formality of the programme	It is an initiative of the Government of Chile that seeks to increase the possibilities of labour insertion of vulnerable men and women, between 16 and 65 years old, through a comprehensive training model delivered by OTEC of the special registry, specialized in the training in trades. Its final objective is to seek the labour insertion of the beneficiaries within 3 months after the end of the training process. It provides job skills for people who are in a vulnerable situation, in order to increase the likelihood of finding a quality job and / or, in the case of independent workers, increase their income.
18. Insert graph of quadrant category programmes	

i) PROGRAMME + CAPABLE "PROGRAMA MÁS CAPAZ"

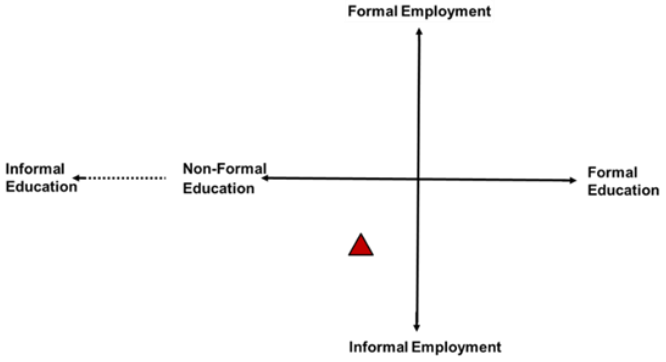
Short title of indicator	Question and reasoning
Title of the programme	-Programme + Capable "Programa más capaz"
1. Form of education	Non-formal
2. a) Number of students enrolled in the programme	1,251 (courses) 26,741 (inscribed) 21,117 (women) 5,624 (men)
3. b)Optional: Number of students who completed programme	16,356 (graduates to date)
4. Duration of the programme	232 (hours of average duration)

5. Geographical location/spread of the programme	National
6. Age of the average student or typical age-range of students	No information
7. Main function/purpose of the programme	Integration into the labour market: from unemployment to employment in the formal sector.
8. Target group of the programme	• Young people (18 to 29 years old) and women (30 to 64 years old) who belong to the 60% most vulnerable of the population, according to the current targeting instrument (RSH). • People with no or little labour participation according to the Unemployment Insurance Base, which translates into up to 50% contribution density in the last twelve months.
9. Prior education needed to enter programme and other entry requirements	Secondary schooling complete.
10. Number of curricula covered by the programme	The programme implements six components: the first provides job training, the second performs labour intermediation, the third provides levelling studies, the fourth provides the possibility of continuing with higher education, the fifth provides skills certification, and the sixth technical assistance and accompaniment for entrepreneurship.
11. Percentage school- and work-based training	N/A
***12.* Examination at end of programme**	The only exit requirement is to have 75% attendance.
13. Progression routes from programme	There is experience in coordination with the University of Aconcagua and professional technical high schools, under the National Qualifications Framework.
***14.* Accreditation of programme**	The accreditation is made per person through ChileValora. People attend a sectoral body of labour competencies, which is an accrediting institution specialized in the subject. An accreditation test is carried out and a certificate is obtained. In the case of not passing the course, a gap report is submitted, which allows for the identification the deficit and to give it back. The cost is financed by SENCE.
15. Implementation of the programme	• Ministry of Labour through the National Training and Employment Service. • The Technical Training Organizations (OTEC).
16. Formality of firms in which training takes place	There are no companies involved.
17. Formality of the programme	The programme seeks to increase labour participation of young people, women and people with disabilities, belonging to the 60% most vulnerable (except in the regions of Antofagasta, Aysén and Magallanes, where the range extends to 80%) and that, in general, have with no or little labour participation. The programme has specific lines: • + Capable Women and Youth: training for men between 18 and 29 years of age and women between 18 and 64 years of age. For young people and women who have not completed the first or second cycle of secondary education, the possibility of accessing study leveling is offered. In addition, men and women

	who are studying the fourth half of secondary vocational technical education can participate in this line. More Capable I'm not sure which is better More Capable or + Capable People with Disabilities: This line seeks to provide people with disabilities with a technical qualification and the necessary work skills to access equal opportunities in the labour market, for which the programme has two training models for people with disabilities: inclusive and specialized. + Capable Entrepreneurial Woman: This line focuses on women, between 18 and 64 years of age, who are developing or intend to develop an business or who work independently. In this line, training is focused on two areas: • The management of the business in relation to the development and consolidation of the employability of people. • The development of specific skills to enhance productivity and competitiveness in the markets in which they participate, generating skills for business development.
18. Insert graph of quadrant category programmes	

j) OMIL STRENGTHENING PROGRAMME "PROGRAMA DE FORTALECIMIENTO OMIL".

Short title of indicator	Question and reasoning
Title of the programme	OMIL Strengthening Programme "Programa de fortalecimiento OMIL".
1. NON-form of education	Non-formal
2. a) Number of students enrolled in the programme	3,726 (enrolled) 1,216 (women) 2,510 (men)
3. b) Optional: Number of students who completed programme	No information
4. Duration of the programme	No information
5. Geographical location/spread of the programme	National
6. Age of the average student or typical age-range of students	No information

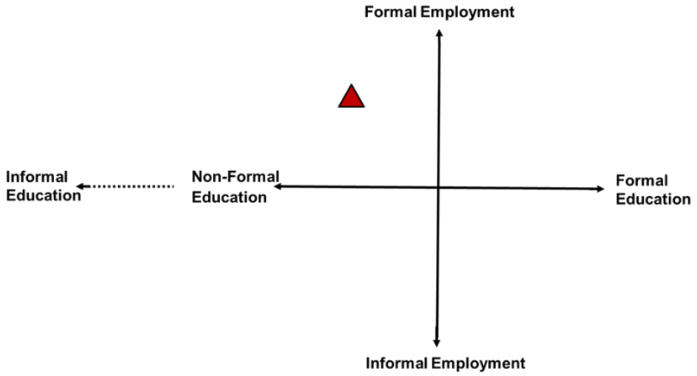
7. **Main function/purpose of the programme**	Integration into the labour market: unemployment to employment in the formal sector.
8. Target group of the programme	• Unemployed, or who are looking for better job opportunities. • National Employment Exchange. • Members of Unemployment Insurance. • Those who have access to labour intermediation services, in the Municipal Labour Information Office (OMIL) of their district.
9. Prior education needed to enter programme and other entry requirements	No educational requirements
10. Number of curricula covered by the programme	No information
11. Percentage school- and work-based training	N/A
12. **Examination at end of programme**	No information
13. Progression routes from programme	No information
14. **Accreditation of programme**	The accreditation process is carried out by "Chile Valora" through the accreditation of skills. People attend a sectoral body of labour competencies and perform an accreditation test and obtain a certificate. In the case of not passinf the course, a gap report is submitted, which allows to know the deficit and to give it back. The cost is financed by SENCE.
15. Implementation of the programme	• Ministry of Labour through the National Training and Employment Service. • The Technical Training Organizations (OTEC). • Municipalities
16. Formality of firms in which training takes place	There are no companies involved
17. Formality of the programme	The Programme serves low-skilled or unemployed people who cannot access jobs due to lack of access to job opportunity information. The programme seeks to develop a public intermediation system, through the transfer of resources and work methodologies to the Municipal Labour Information Offices (OMIL). The success of the programme will depend on the capacity of the particular municipality, which varies widely in the districts of Chile (Gaston Cerda, SENCE).
18. Insert graph of quadrant category programmes	

Non-Formal-Formal Programme

k) CHILE VALORA PROGRAM "CHILE VALORA"

Short title of indicator	Question and reasoning
Title of the programme	Chile Valora Programme "Chile Valora"
1. NON-form of education	Non-formal
2. a) Number of students enrolled in the programme	10,579 people were evaluated in 2016. 88,502 (2002-2016) evaluation processes leading to certification. 67% men and 33% women
3. b)Optional: Number of students who completed programme	9 out of 10 participants are certified.
4. Duration of the programme	N/A
5. Geographical location/spread of the programme	National
6. Age of the average student or typical age-range of students	50% are between 33 and 55 years old (42 years old on average)
7. Main function/purpose of the programme	The Certification System of Labour Competencies is a public policy established by Law No. 20,267 in 2008. ChileValora, functionally decentralized public service is related to the Presidency of the Republic through the Ministry of Labour and Social Security. Its main function, as established by said law is "the formal recognition of the labour competencies of individuals, regardless of the way they have been acquired and whether or not they have a degree or academic degree granted by formal education in accordance with the provisions of Law No. 18,962, Organic Constitutional Teaching; as well as favoring the opportunities of continuous learning of people, their recognition and valorization, through processes of evaluation and certification of them, based on standards defined and validated by the productive sectors ".
8. Target group of the programme	People who have not formalized their apprenticeships.
9. Prior education needed to enter programme and other entry requirements	Without requirements.
10. Number of curricula covered by the programme	• 864 specific profiles and 2,192 accredited competencies • Sectores de Chile Valora (22). 1. Professional, Scientific and Technical activities 2. Management 3. Aquaculture and Fishing 4. Public Administration 5. Agricultural and Livestock 6. Art, Entertainment and Recreation 7. Commerce 8. Construction 9. Education 10. Food and Drink Production 11. Gastronomy, Hospitality y Tourism

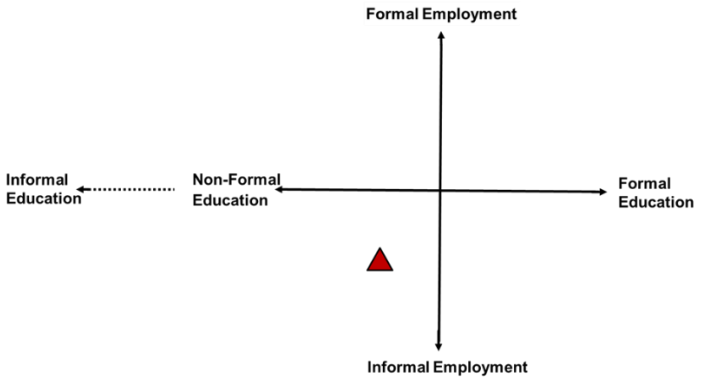
	12. Information y Communication 13. Metal Manafacturing 14. Manufacturing (Non Metal) 15. Metal Mining 16. Mining (Non Metal) 17. Services 18. Health Services and Social Assistance 19. Insurance and Financial Services 20. Forestry and Forestry Activities 21. Gas, Electricity and Water Supply 22. Transport and Logistics
11. Percentage school- and work-based training	N/A
***12.* Examination at end of programme**	The recognition of labour competencies granted by "ChileValora", is via in a certificate granted to workers that meet performance standards, in relation to the competencies defined by the productive sector in which they work, after participating in an evaluation process. The certificate is endowed with legitimacy since it is validated and recognized by the different actors of the productive sectors of the country.
13. Progression routes from programme	The programme seeks to advance the integration of the certification system with that of job training and professional technical education. The specific initiatives defined are the following: • Participation in the project National Framework of Qualifications for Professional Technical Training developed by the Ministry of Education in conjunction with Corfo, Sence and ChileValora. This framework integrates the current Qualifications Framework for the training and labour certification of ChileValora and Sence. • Participation in the Professional Technical Training Advisory Council. • Joint Work Plan with Ministry of Education for the development of training offer in state CFT and incorporation of RAP mechanisms. • Graduates from 4 TP schools of COREDUC participate in evaluation and certification of labour competencies. • SONAMI Foundation Agreement and the Santa María Technical University, for the RAP project, under the ChileValora system. • Universidad Andrés Bello recognizes previous learning based on ChileValora profiles.
***14.* Accreditation of programme**	38 competency accrediting centres.
15. Implementation of the programme	It is formed by a collegiate superior management body (directory) and an executive secretariat that heads the service. DIRECTORY Tripartite, joint and resolutive. Participants: 3 representatives of the CPC, 3 of the CUT, and 3 of the State (appointed by the Minister of Labour, Minister of Education and Minister of Economy).
16. Formality of firms in which training takes place	3,826 total companies involved. All formal. Big companies (18%) Medium sized companies (12%) Small companies (13%) Microenterprises (57%)

17. Formality of the programme	Non formal
18. Insert graph of quadrant category programmes	

Non-Formal-Informal Programme

I. PEÑALOLEN SEAMSTRESS COOPERATIVE "COOPERATIVA DE COSTURERAS DE PEÑALOLEN"

Short title of indicator	Question and reasoning
Title of the programme	Peñalolen seamstress cooperative "Cooperativa de costureras de Peñalolen"
1. NON-form of education	Non-formal
2. a) Number of students enrolled in the programme	600 (approximate number of people working in the textile industry in the Peñalolen district)
3. b) Optional: Number of students who completed programme	5% between 20 and 30 years 20% between 31 and 40 years 25% between 41 and 50 years 18% between 51 and 60 years 32% More than 60
4. Duration of the programme	One year
5. Geographical location/spread of the programme	• Peñalolén District • Innovation Fund for Competitiveness (FIC-R) from the Metropolitan Regional Government of Santiago.
6. Age of the average student or typical age-range of students	Non information
7. Main function/purpose of the programme	It facilitates the incorporation of innovation in the production processes of seamstresses in the Peñalolén district.
8. Target group of the programme	Women in situations of social vulnerability.
9. Prior education needed to enter programme and other entry requirements	No requirements
10. Number of curricula covered by the programme	No curriculum
11. Percentage school- and work-based training	No information

12. **Examination at end of programme**	No
13. ***Progression routes from programme***	No
14. **Accreditation of programme**	No
15. Implementation of the programme	• Foundation Saber Hacer (Know how to) • Municipality of Peñalolen
16. Formality of firms in which training takes place	No. Most women initially work informally. After the Project they managed to put together a cooperative.
17. Formality of the programme	The purpose of this project was to generate a new stage of innovation and entrepreneurshipin the Peñalolén district, promoting a local strategy of promoting the textile trade as a potential productive nucleus.
18. Insert graph of quadrant category programmes	

Appendix B. Expert Interviews in Chile

Table B1: List of individual attributes of experts of the TVET system and their institutional affiliation for the formal and informal sector

Thematic field	Formal sector	Informal sector
Government	• High-ranking/key officials who work directly on TVET… ➢ In all relevant ministries, ➢ At all levels where TVET is administered • Institution of expert has to be large enough to be representative for its "thematic field" **Examples:** Ministry of Education, Ministry of Labour	n.a.
Intermediaries	• High-ranking/key individuals who work directly on TVET… ➢ In bodies filling all roles played by the private sector in TVET ➢ In bodies representing important sectors of the economy ➢ In organizations representing employees' interests • Institution of expert has to be large enough to be representative for its "thematic field" **Examples:** Chambers of commerce (of a certain sector), trade associations, clusters of companies ➢ e.g. the Chambres de Métiers Régionales (CMR) or the Confédération Nationale des Artisans du Bénin (CNAB) in Benin, or the UCCAEP in Costa Rica ➢ Unions, other kinds of employee representatives	• High-ranking/key individuals who work directly on TVET… ➢ In bodies filling all roles played by the private sector in TVET ➢ In bodies representing important sectors of the economy • (Social) institution of expert has to be large enough to be representative for its "thematic field" **Examples:** Chambers of commerce (of a certain sector), trade associations ➢ e.g. the Chambres de Métiers Régionales (CMR) or the Confédération Nationale des Artisans du Bénin (CNAB) in Benin, or the UCCAEP in Costa Rica ➢ Important leaders, such as clan chefs
Researchers	• Senior scholars who work directly on TVET… ➢ With advanced degrees in relevant fields, ➢ With demonstrable history of research on TVET, ➢ In all research institutes dealing with TVET **Examples:** Universities, private research institutes, NGOs	

Non-governmental institutions or Institutions composed of actors from two or more of the above categories	• High-ranking/key individuals who work directly on TVET… **Examples:** Educación 2020 in Chile; Instituto Nacional de Apredizaje (INA) in Costa Rica	• High-ranking/key individuals (who work directly on TVET or are important for the TVET sector) **Examples:** ➢ Foreign development aid agencies as for example SDC and others in Nepal ➢ Clans, guilds

Source: Extension of Table 3.2. in Renold et al (2016, p. 18).

Table B2: Overview of Interviewed actors and their institutional affiliation

Type of actor	Institutional Affiliation	Reason for selection
Government	Outgoing Government Technical Education Secretary - Ministry of Education	Interviewed person knows the complete system (private, NGO, public)
	Technical Education Secretary - Ministry of Education	Consultant in charge of the National Qualifications Framework
	Departament of studies SERCOTEC	Person responsible for training in Technical Cooperation Service (marginal in number of trained but collaborator of SENCE, MINTRAB, FOSIS, etcetera)
	Technical Coordinator National Employment Survey (CIUO)	Expert in classifications of trades for the National Employment Survey. He knows the map of trades in Chile.
	National Training and Employment Service. Ministry of Labour	Expert in non-formal education in Chile.
	Coordinator of Technical Secondary Education in the Ministry of Education	Interviewed person knows all the formal system of technical education in Chile.
	Director of the Area of Educational Innovations in Links, Centre of Education and Technology, Ministry of Education of Chile	Former member of the technical team at the largest training centre in Chile (INACAP)
Researchers	University Alberto Hurtado	National Expert TVET
Business	Manager Educational Corporation of ASIMET Commissioner of the National Accreditation Commission	Business representative TVET
Non-Governmental institutions	Researcher Education 2020 NGO	Expert in influential NGO
	Director NGO Saber Hacer	He leads an NGO for non-formal technical education (trades)