Kemper, Johanna (Ed.)

Book

The KOF education system factbook: Canada

Reference: (2017). The KOF education system factbook: Canada. Edition 1. Zurich, Switzerland : ETH Zurich, KOF Swiss Economic Institute.
doi:10.3929/ethz-b-000236159.

ETH zürich

KOF Swiss Economic Institute

The KOF Education System Factbook: Canada

Edition 1, December 2017

KOF

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Table of Contents

List of Figures

List of Tables

List of Abbreviations

AM	Apprenticeship Manitoba
AVS	Attestation of Vocational Studies
BOG	Board of Governors
CAAT	Colleges of Applied Arts and Technology
CAQC	Campus Alberta Quality Council
CAQC	Campus Alberta Quality Council
CCDA	Canadian Council of Directors of Apprenticeship
CCQ	The Commission de la construction du Québec
CÉGEP	Collège d'Enseignement Général et Professionnel
CETA	Comprehensive Economic and Trade Agreement
CiCan	Colleges and Institutes Canada
CMEC	Council of Ministers of Education, Canada
CVC	Curriculum Value Chain
CVS	Credential Valuation Services
DEC	Diplôme d'Études Collégiales
DES	Diplôme d'Études Secondaires
DVS	Diploma of Vocational Studies
EEL	Education Employment Linkage
EPL	Employment Protection legislation
ESDC	Department of Employment and Social Development Canada
FINCOL	Financial Information of Community Colleges and Vocational Schools Survey
G7	Group of Seven

GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GII	Global Innovation Index
ISCED	International Standard Classification of Education
ITA	Industry Training Authority
ITAC	Industry Training and Apprenticeship Commission
KOF	Swiss Economic Institute
KPI	Key Performance Indicator
LAC	Local Apprenticeship Committee
LFPR	Labour Force Participation Rates
MAESD	Ministry of Advanced Education and Skills Development
MELS	Ministère de l'Éducation, du Loisir et du Sport
MTCU	Ministry of Training Colleges and Universities
NEET	Neither in employment nor in education or training
NER	Net Enrolment Ratio
OCQAS	Ontario College Quality Assurance Service
OECD	Organisation for Economic Co-operation and Development
PAC	Program Advisory Committee
PAC	Provincial Apprenticeship Committee
PET	Professional Education and Training
PTC	pre-work training certificate
SHSM	Specialist High Skills Major
TCST	Training Certificate for Semi-skilled Trade

TDA	Training Delivery Agent
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training
VPET	Vocational Professional Education and Training
VPETA	Vocational and Professional Education and Training Act
WEF	World Economic Forum
YLMI	Youth Labour Market Index

FOREWORD

The increasing competitiveness of the world economy as well as the high youth unemployment rates after the worldwide economic crises have put pressure on countries to upgrade the skills of their workforces. Consequently, vocational education and training (VET) has received growing attention in recent years, especially amongst policy-makers. For example, the European Commission defined common objectives and an action plan for the development of VET systems in European countries in the *Bruges Communiqué on Enhanced European Cooperation in Vocational Education and Training for 2011-2020* (European Commission, 2010). In addition, a growing number of US states and other industrialized, transition, and developing countries (for example Hong Kong, Singapore, Chile, Costa Rica, Benin and Nepal) are interested in either implementing VET systems or making their VET system more labor-market oriented.

The appealing outcome of the VET system is that it improves the transition of young people into the labor market by simultaneously providing work experience, remuneration and formal education degrees at the secondary education level. If the VET system is optimally designed, VET providers are in constant dialogue with the demand-side of the labor market, i.e. the companies. This close relationship guarantees that the learned skills are in demand on the labor market. Besides practical skills, VET systems also foster soft-skills such as emotional intelligence, reliability, accuracy, precision, and responsibility, which are important attributes for success in the labor market. Depending on the design and permeability of the education system, VET may also provide access to tertiary level education (according to the ISCED classification): either general education at the tertiary A level or professional education and training (PET) at the tertiary B level. PET provides occupation-specific qualifications that prepare students for highly technical and managerial positions. VET and PET systems are often referred to together as “vocational and professional education training (VPET)” systems.

Few countries have elaborate and efficient VPET systems. Among these is the Swiss VPET system, which is an example of an education system that successfully matches market supply and demand. The Swiss VPET system efficiently introduces adolescents to the labor market, as shown by Switzerland’s 2007-2017 average youth unemployment rate of 8.1 percent compared to 14.8 percent for the OECD average (OECD, 2017).

Though not many countries have VPET systems that are comparable to Switzerland’s in terms of quality, efficiency and permeability, many have education pathways that involve some kind of practical or school-based vocational education. The purpose of the KOF Education System Factbook Series is to provide information about the education systems of countries across the world, with a special focus on vocational and professional education and training.

In the KOF Education System Factbook: Canada, we describe Canada's vocational system and discuss the characteristics that are crucial to the functioning of the system. Essential components comprise the regulatory framework and the governance of the VPET system, the involved actors, and their competencies and duties. The Factbook also provides information regarding the financing of the system and describes the process of curriculum development and the involved actors.

The Factbook is structured as follows: First, we provide an overview of Canada's economy, labor market, and political system. The second part is dedicated to the description of the formal education system. The third section explains Canada's vocational education system. The last section offers a perspective on Canada's recent education reforms and challenges to be faced in the future.

EDITING AND ACKNOWLEDGEMENTS

This Factbook is edited by Johanna Kemper. We want to thank Arturo Bänziger for the elaboration of the contents, and Clair Premzic for the excellent language and content editing. Without you, the realization of this Factbook would have been impossible!

The KOF Education System Factbooks has to be regarded as work in progress. The authors do not claim completeness of the information which has been collected carefully and in all conscience. Any suggestions for improvement are highly welcome!

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Suggested citation:

KOF Swiss Economic Institute (2017). KOF Education System Factbook: Canada. KOF Education System Factbooks, ed. 1. Zurich: Swiss Federal Institute of Technology

1. The Canadian Economy and its Political System

One of the main purposes of an education system is to provide the future workforce with the skills needed in the labour market. The particularities of a country's economy and labour market are important factors determining the current and future demand for skills. Therefore, these will briefly be described in the first part of this Factbook. In addition, this part provides an overview Canada's of political system with emphasis on the description of the education politics.

1.1 The Canadian Economy

Canada is the second largest country in the world (after Russia) in terms of surface, occupying roughly the northern two-fifths of the continent of North America. It is a founding member of the OECD and member of the Group of Seven (G7) countries. In 2016, its GDP per capita amounted to 42,376[1], making it comparable to the German or Austrian levels and above the OECD average of 38,025 (Encyclopedia Britannica, 2017a; OECD, 2017a).

The Canadian economy has shown overall growth over the 1990-2016 period with an average GDP growth rate of 2.2 percent per annum (p.a.), outperforming the OECD as a whole with a GDP growth rate of 2.1 percent p.a.. That performance was in a large part due to a strong period of growth in the mid-nineties until 2001, as well as a strong growth after the global financial crisis between 2010 and 2014 (OECD, 2017b).

Trade plays a major role for the Canadian economy. Traditionally, Canada has maintained a current account surplus in the balance of payments. Since the financial crisis however, the surplus turned into a deficit amounting to approximately 3.1 percent of GDP ($ 55.3 Billion dollars) between 2010 and 2014. The contribution of net exports to GDP was negative in 2011 and 2012 due to a more rapid expansion of imports than exports. This trend reversed in 2013 and 2014 with the reduction of import growth, resulting in a narrowing of the current account deficit in 2014. In 2016, Canada's current account deficit amounted to $ 51.1 Billion dollars[2] or 3.3 percent of GDP (WTO, 2015a; World Bank, 2017a). The Canadian economy has certain weaknesses with respect to trade. It relies heavily on the United States as its major trading partner and has a narrow export product base, mainly energy and mineral products, transportation and vehicles. In order to improve this, the country is focusing its trade policies on expanding markets for its businesses primarily through the negotiation of bilateral free trade

[1] GDP per Capita, US$, constant prices, constant PPPs, ref. year 2010.
[2] Current US$.

agreements. Recent examples include the Comprehensive Economic and Trade Agreement (CETA) between Canada and the European Union, which is expected to come to force the 21st of September 2017 and which eliminates 99 percent of customs duties (European Comission , 2017 ; WTO, 2015a).

Table 1: Share of value added and employment per sector, 2013

Sector	Canada: Value added (%)	EU-28: Value added (%)	Canada: Employment (%)	EU-28: Employment (%)
Primary sector	1.8	1.7	2.2	5.0
Agriculture, hunting and forestry, fishing	1.8	1.7	2.2	5.0
Secondary sector	28.8	24.6	19.9	22.1
Manufacturing, mining and quarrying and other industrial activities	20.8	19.2	12.2	15.6
of which: Manufacturing	10.6	15.5	9.7	14.0
Construction	8.0	5.4	7.7	6.5
Tertiary sector	69.3	73.8	78.0	72.9
Wholesale and retail trade, repairs; hotels and restaurants; transport; information and communication	21.4	23.7	30.4	27.3
Financial intermediation; real estate, renting & business activities	26.1	27.3	17.6	15.8
Public administration, defense, education, health, and other service activities	21.8	22.8	29.9	29.8

Source: Eurostat (2017a; 2017b) for Eu-28, OECD (OECD, 2017c).

The Canadian economy is dominated by the private sector. Canadian agriculture is firmly private but strongly depends on government subsidies in order to compete with the highly subsidized agricultural sectors of the European Union and United States. The Canadian primary sector accounted for only 1.8 percent of value added and 2.2 percent of total employment in 2013 (Table 1). This is half of the share of employment of the EU-28 countries, which lies at 5 percent generating 1.7 percent of value added.

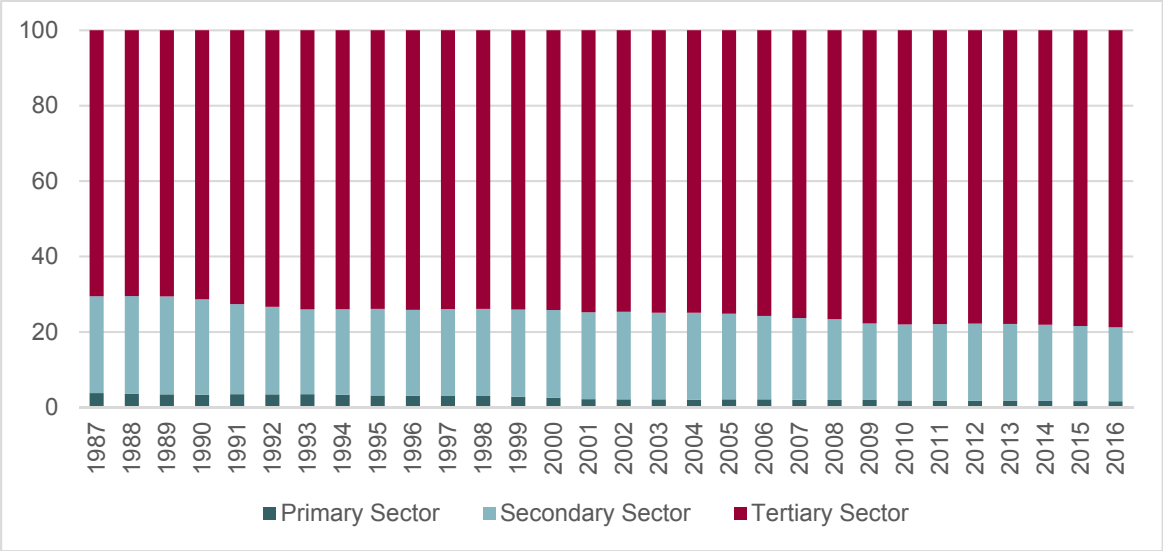
One fifth of the Canadian labor force works in the secondary sector, contributing to 28.8 percent to total value added and accounting for 19.9 percent of total employment. Canada's iron and steel industry is modern and efficient and produces steel products for the manufacture of motor vehicles, mining equipment or household appliances. The average share of the labor force working for the manufacturing sector in EU-28 is slightly above Canada (22.1 percent) but generates a smaller share of value added (24.6%).

The service sector in Canada employs more people than all other sectors combined (78 percent). This figure is slightly higher than the average employment share of the EU-28 (72.9

percent). The contribution of Canada's tertiary sector to total value added is with 69.3 percent smaller than the EU-28 average of 73.8 percent.

The share of employment in the tertiary sector has been above 70 percent since 1987 (Figure 1) reaching almost 80 percent in 2016. The increase in tertiary sector employment has been almost linear throughout the 20-year period, as have been the declines of employment in the primary (from 4 to 3 percent)and secondary sector (from 26 to 20 percent) from 19980 until 2016.

Figure 1: Employment by sector (as % of total employment), 1987-2016



Source: (World Bank, 2016).

In terms of productivity, the Global Competitiveness Index (GCI) of the World Economic Forum (WEF) ranked the Canadian economy 13th out of 140 countries, obtaining similar scores to Denmark and Qatar (position 12 and 14 respectively). The improvement in position from rank 15 was mainly fueled by a lower budget deficit and a more favorable assessment of its financial market development. The country's highly efficient labor markets, good outcomes in health and primary education and a solid institutional environment have strongly contributed to its position in the ranking (WEF, 2015).

Regarding innovation, the Global Innovation Index (GII) ranks the Canada at the 18th place with a score of 53.7, behind countries like France and Israel. Down three positions from 2016, Canada shows particular strengths in its institutions, market sophistication political environment and investment. Its decline in ranking positon is mainly due to losses in the categories of infrastructure (particularly in the sub-category of ecological sustainability) and business sophistication, dropping most in terms of innovation linkages due a decline in university/ research collaborations (Dutta, Lanvin, & Wunsch-Vincent, 2017).

1.2 The Labour Market

In the first part of this section, we will describe the general situation of Canada's labour market. In the second part, we will refer to the youth labour market in particular.

1.2.1 Overview of Canada's Labour Market

Canada's labour market has generally succeeded in performing well in terms of job creation despite recent challenges due to the global economic climate. From 2006 to2014, it managed to create close to 1.6 million new jobs net. Despite the weak global economic environment caused by the financial crisis, Canada showed the strongest labour market performance among all G7 economies, with an increase of the employment rate by 9.8 percentage points during that period. In contrast, the United States or the United Kingdom only managed to achieve a 1.5 percent and 3.5 percent increase respectively (Department of Finance Canada, 2014).

The Canadian labour market outperforms the OECD average with regard to labour force participation rates (LFPR) and unemployment rates. In 2015, total Canadian LFPR was 72.5 percent (**Table 1**Table 2). The OECD average was below Canadian levels at 66.3 percent. In terms of unemployment, the Canadian unemployment rate was almost identical to OECD average, both having a total unemployment rate of 7 percent and only slightly differing in terms of youth unemployment where Canada had a rate of 13.2 percent slightly below the OECD average of 13.9 percent.

Table 2: Labour force participation rate, unemployment rate by age 2015

	Labour force participation rate		**Unemployment rate**	
Age Group	Canada	OECD average	Canada	OECD average
Total (15-64 years)	72.5	66.3	7.0	7.0
Youth (15-24 years)	55.8	40.5	13.2	13.9
Adults (25-64 years)	76.3	72.3	5.9	6.0

Source: OECD (OECD, 2015a).

A breakdown by educational attainment reveals that the Canadian LFPR and unemployment rate were constantly slightly below the OECD average in 2015 (**Table 3**). For Canada and the OECD average equally, people with less than upper secondary education showed the lowest LFPR and the highest unemployment rate. In contrast, people with upper secondary, non-tertiary education had the highest levels of LFPR and experience lower unemployment. Interestingly, people with tertiary education performed less well in terms of employment but not unemployment.

Table 3: Labour force participation rate, unemployment rate by educational attainment 2015 (persons aged 25-64)

	Labour force participation		Unemployment rate	
Education Level	Canada	OECD average	Canada	OECD average
Less than upper secondary education	55.2	55.8	10.4	12.5
Upper secondary level education	81.8	83.8	6.8	7.3
Tertiary education	73.5	74.4	4.7	4.8

Source: (OECD, 2015c).

Canada has a relatively low level of Employment Protection legislation (EPL), as quantified by the OECD Index of Employment Protection, which is a multidimensional index that quantifies the strictness of EPL across countries. It is scaled between zero to six, where zero refers to a low and six to a high level of EPL. For Canada, the index shows an EPL level of 0.92 in 2013, which is significantly below the OECD average of 2.04. In this aspect, the Canadian labour market is closer to the United States, which has the lowest level of EPL among the OECD countries (index value of 0.26) (OECD, 2017d).

About 26.4 percent of all Canadian wage and salary earners belong to trade unions. This is almost 10 percent higher than the OECD average of 16.7 percent (OECD, 2017e). Almost all Canadian industries are covered under provincial labour legislation, for which minimum wage legislation exists as a part of it. Minimum wages in all 10 provinces were very similar by the end of 2013, ranging from $9.95 in Alberta to $10.45 in Manitoba (Fortin & Lemieux, 2015). Unions have a major influence on Canadian provincial level social policy, particularly on employment and welfare policies (Wilson, 2017).

The WEF's Global competitive Index ranks Canada's labour market efficiency eighth out of all 138 countries examined. In the thematic pillar of *labour market efficiency*, the countries hiring and firing practices, pay and productivity, capacity to attract talent and reliance on professional management all hold top 15 positions in the global ranking (WEF, 2017).

1.2.2 The Youth Labour Market

The KOF Swiss Economic Institute developed the KOF Youth Labour Market Index (KOF YLMI) to compare how adolescents participate in the labour market across countries (Renold et al., 2014). The foundation for this index is the critique that a single indicator, such as the unemployment rate, does not suffice to describe the youth labour market adequately nor provide enough information for a comprehensive cross-country analysis. To increase the

amount of information analysed and to foster a multi-dimensional approach, the KOF YLMI consists of twelve labour market indicators[3] that are grouped into four categories.

Dimensions of the KOF YLMI
Activity state - Unemployment rate - Relaxed unemployment rate[4] - Neither in employment nor in education or training rate (NEET rate)
Working conditions Rate of adolescents: - with a temporary contract - in involuntary part-time work - in jobs with atypical working hours - **in work at risk of poverty**[5]Vulnerable unemployment rate[6]
Education - Rate of adolescents in formal education and training - Skills mismatch rate
Transition smoothness - Relative unemployment ratio[7] - Long-term unemployment rate[8]
Source: Renold et al. (2014).

The first category describes the *activity state* of youth (ages 15-24 years old) in the labour market. Adolescents are classified according to whether they are employed, in education, or neither (unemployed, discouraged and neither in employment nor in education or training; see info box to the right). The category *working conditions* and the corresponding indicators reflect the type and quality of jobs the working youth have. The *education* category accounts for the share of adolescents in education and training and for the relevance of and their skills on the labour market. The fourth category, *transition smoothness*, connects the other three categories by capturing the school-to-work transition phase of the youth. Each country obtains a score of 1 to 7 on each particular indicator of the KOF YLMI. A higher score reflects a more favourable situation regarding the youth labour market and a more efficient integration of the youth into the labour market.

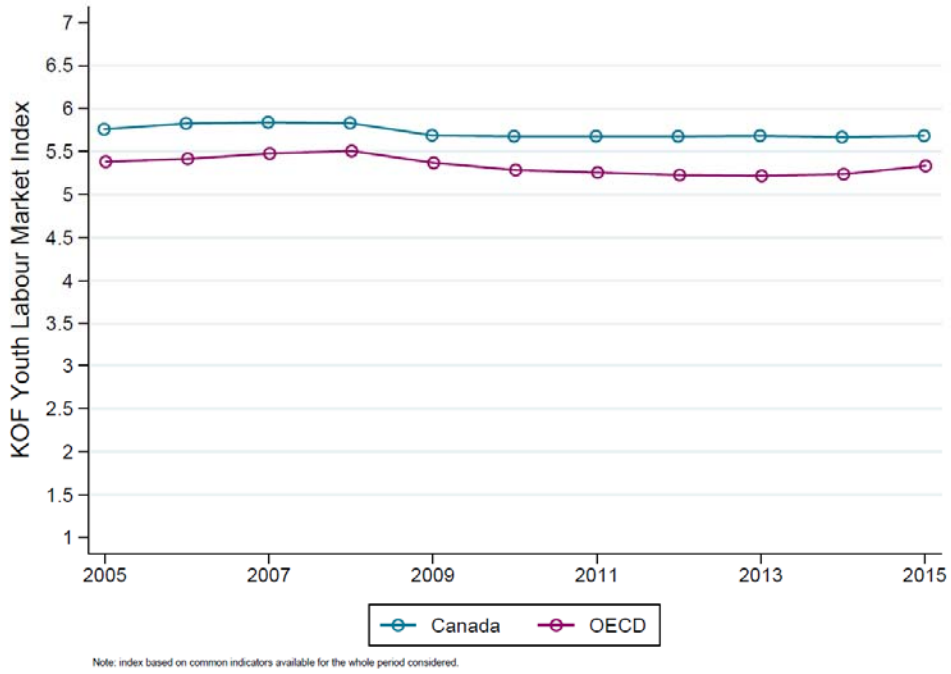
One of the major drawbacks of the KOF YLMI is data availability. When data is lacking, a category can occasionally be based on a single indicator or must be omitted entirely when not a single indicator for that category exists in a given country. A lack of indicators can make comparisons across certain countries or groups of countries problematic and sometimes even impossible.

[3] The data for these indicators are collected from different international institutions and cover up to 178 countries for the time period between 1991 and 2012.
[4] It is calculated as the number of unemployed and discouraged workers as a share of the entire labour force. Discouraged workers have given up the search for work (not actively seeking), although they have nor job and are currently available for work (also: "involuntary inactive").
[5] Those who cannot make a decent living out their earnings, being at risk of poverty as a percentage of the working population.
[6] Share of the employed population working on their own account or those working in their family business and thus contributing to the entire family income. Both are less likely to have formal work arrangements and are therefore less protected by labour laws and more exposed to economic risk.
[7] Is defined as the youth unemployment rate (15-24 years) as a share of the adult unemployment rate (25+). If the youth cohort is affected in the same way than the adult group with respect to unemployment, then the relative unemployment ratio will be equal to one. If the youth are relatively more affected, then the ratio will be bigger than one.
[8] Those unemployed for more than one year (52 weeks) in the total number of unemployed (according to the ILO definition).

1.2.3 The KOF Youth Labour Market Index (KOF YLMI) for Canada

The KOF YMLI for Canada is based on six indicators: the unemployment rate, the NEET rate, involuntary part-time worker rate, vulnerable employment rate, relative employment ratio and the incidence of long-term employment rate. Therefore, a comparison of the complete KOF YLMI is not possible. However, we show the evolution of this reduced KOF YLMI along with the reduced OECD average for the same indicators from 2005 to 2015. Figure 2 shows that the KOF YLMI for Canada has been constantly above the OECD average, implying that the situation of the youth in Canada was on average more favourable than in the average OECD countries.

Figure 2: YLM-Index Canada versus OECD, 2005-2015



Source: (KOF, 2017).

Canada's more favourable conditions are due to superior results mainly in the categories of youth unemployment, incidence of long-term unemployment rate and the vulnerable employment rate. The largest difference among indicators was the incidence of long-term unemployment where Canada scored close to the highest level at 6.8 versus an OECD average of 5.23 index points. All other indicators were approximately 0.3 index points above of the OECD average except the involuntary part-time worker rate in which the OECD obtained a superior score with 5.67 index points, compared with the Canadian level of 5.23 index points. A spider web diagram of all the compared indicators is available under Figure A9 in the Appendix.

1.3 The Political System

Understanding the basics of a country's political system and getting to know the political goals with respect to its education system are crucial points for the understanding of the education system in a broader sense. In the first part, we explain Canada's political system in general. The politics and goals regarding the education system will be referred to in the second part.

1.3.1 Overview of the Canadian Political System

Canada is a constitutional monarchy in which the titular head is the reigning monarch of the United Kingdom, represented locally by a Canadian governor-general appointed by the Canadian prime minister. In practice however, Canada is an independent federal state established by the British North American act in 1867. With this act, the parliament of the United Kingdom united the three British colonies of Nova Scotia, New Brunswick and Canada as one Dominion with the name of Canada. The act also divided the province of Canada into the provinces of Ontario and Quebec and included a provision to allow the admission of other colonies and territories of British North America. The 1867 act served as Canada's constitution until 1982, when the British Parliament signed Canada's Constitution Act of 1982 and transferred authority to the independent Canadian Parliament. Today, Canada consists of 10 provinces and 3 territories (Encyclopedia Britannica, 2017a).

According to the constitution, either English or French may be used in all institutions of the parliament, and government of Canada. The parliament of Canada is the main federal legislative authority and is composed of the sovereign governor general, the House of Commons (with 338 directly elected members) and the Senate (consisting of 105 appointed members). Although both the House of Commons and the Senate may create new legislation, only the House of Commons may introduce bills for public fund expenditure or the imposition of tax (ibid.).

Legislative and executive authority are divided between the federal government and the provinces. The main responsibilities of the national government include defence, trade and commerce, banking, credit, criminal law, currency and bankruptcy, citizenship, taxation, postal services, fisheries, transportation and telecommunications. Provincial powers embrace mainly issues that are of local or private concern such as education, civil law, property and civil rights, hospitals, licenses, municipal government or the management and sale of public land (ibid.).

The legislature of each province divides its territory into geographic areas known as municipalities, counties, cities, towns, villages or municipal districts. Since municipal government falls under provincial jurisdiction, there are 10 distinct systems of municipal government, with many variations within each system. These variations stem primarily from

differences in historical development, area or population density. There are over 4500 incorporated municipalities and local government districts in Canada, each with various powers and responsibilities suited to their classification. Municipalities are governed by an elected council and mainly cover the responsibilities closely related to citizens' everyday life such as well-being or protection. In addition to the local municipal government, various local commissions are elected (or appointed) to administer education, utilities or other local services (Encyclopedia Britannica, 2017a).

The Economist Intelligence Unit's Democracy Index ranks Canada in the highest category of "full democracy" with a score of 9.15, this score is similar to other highly democratic countries such as Switzerland (9.09),Denmark (9.20) or Australia (9.01) (The Economist, 2017). Corruption perception in Canada is low with Transparency International ranking Canada 9th out of 176 countries, with very similar levels to Germany and the Netherlands (Transparency International, 2017).

The Worldwide Governance Indicators project from the World Bank combine governance indicators for six dimensions of governance: voice and accountability, political stability and absence of violence, government effectiveness, and regulatory quality, rule of law and control of corruption. Canada ranks on average around the 94.6 percentile rank for each of the surveyed dimensions. In contrast, the OECD has an average of 84 (Would Bank, 2015).

1.3.2 Politics and Goals of the Education System

The British North America Act of 1867 stipulates that organizing and administering public education is a provincial competence. In each of the 13 jurisdictions, that is, the 10 provinces and 3 territories, one or two ministries or departments are responsible for the organisation, delivery and assessment of the education system. Canada's ministers collaborate on national educational priorities under CMEC (council of Ministers of Education, Canada). The national government is only directly involved with providing education in the Northwest Territories, Yukon and Nunavut where it allocates funds but does not administer the system. Furthermore, it is also responsible for providing education for inmates of federal penitentiaries, in Indian schools throughout Canada, for the families of members of the Canadian forces on military stations and through Canada's Royal Military College in Kingston, Ontario. In addition, the federal government is concerned with financing adult vocational training programs and the provision of financial support to the provinces for the operating costs of postsecondary education (Encyclopedia Britannica, 2017a; OECD, 2015d).

Although education policies vary from province to province, each province has a department of education managed by a minister who is a member of the provincial cabinet. Decision-making is confined to school boards or school districts, and the level of authority delegated is

at the discretion of the provincial/territorial government. Publicly funded institutions maintained by the jurisdictions mostly provide the education. (Encyclopedia Britannica, 2017a; OECD, 2015d).

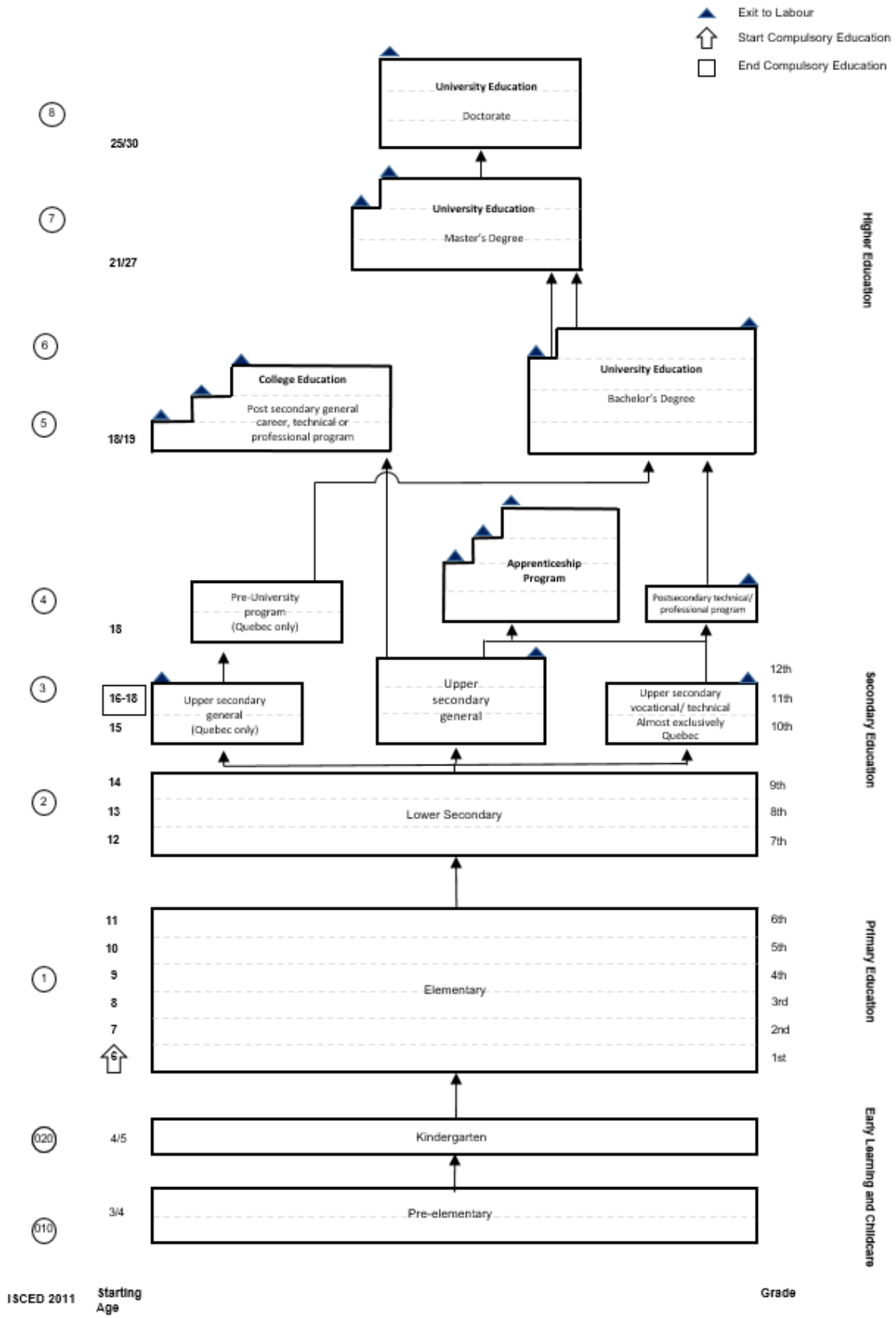
In terms of objectives of the educational system, the Learn Canada 2020 framework is a framework that provincial and territorial ministers of education will use through the Council of Ministers of Education in order to enhance the learning opportunities and overall education outcomes of the country's education system. The framework focuses on solving the most urgent issues in the four pillars of lifelong education: early childhood learning and development, elementary to high school systems, postsecondary education and adult learning skill and development by 2020. Within the four pillars, ministers have identified eight specific activity areas: literacy, aboriginal education, postsecondary capacity, education for sustainable development, international and national representation, official languages, learning assessment programs and performance indicators and education data and research strategy (CMEC, 2008a).

Since education is a provincial competence, it is common to find province-specific educational programs that aim to solve territory-specific challenges. Nova Scotia's School Plus program aims to support child and family using the school as the center of service delivery. The aim is to provide a faster access to help for students and their caregivers with issues such as crisis intervention, youth mental health or childcare. Other examples of province specific educational programs include the *Labor Force and Skill Development Strategy* launched in New Brunswick that aims to ease student transition into the workforce or Quebec's *I Care About School* strategy to reach 80 percent completion rate in secondary education by 2020 (OECD, 2015d).

2. Formal System of Education

Public education is provided free to all Canadian citizens and permanent residents until the end of secondary school, which usually occurs at age 18. Ages for compulsory schooling vary from one province or territory to another. Most provinces/territories require schooling from age six or seven onwards, depending on a certain date specified in each province's/territory's legislation (age 5 in New Brunswick and British Columbia) to age 16. In New Brunswick and Ontario, education is compulsory up to the age of 18 or until graduation. Although each jurisdiction has adapted their educational system to respond to particular challenges regarding the territory's history or cultural heritage, geographical location or other particular circumstances, there are still similarities across the country (Statistics Canada, 2016). Figure 3 displays the structure of the formal education system classified according to the International Standard Classification of Education (ISCED 2011).

Figure 3: ISCED 2011 Mapping of Canada's Educational System[9]



Source: Own illustration based on (UNESCO, 2017a).

Sections 2.1 to 2.5 will provide further insights regarding specific differences among the education systems of Canada's provinces/territories.

Though the age of compulsory schooling varies by provinces/territories, Figure 3 above reveals how the majority require attendance from age six to age 16-18. In most provinces/territories, primary or elementary education corresponds to the first six to eight years of education, while secondary education covers the subsequent four to six years. At the secondary education level, an array of programs in both the academic and vocational areas are available. Students who have managed to complete the secondary education level successfully can apply to enter a college or university. The option to enter a vocational program, such as apprenticeships, is also available. The majority of these programs do not require secondary school graduation (Statistics Canada, 2016).

Postsecondary education can be attained in either "degree-granting" or "non-degree-granting" institutions. Universities typically offer four-year undergraduate programs leading to bachelor's degrees. Advanced degrees include master's degrees, largely requiring two years of study after a first degree, and doctoral degrees, which require three to five years of postgraduate study and research as well as a thesis. Advanced degrees are not offered in all universities, particularly at the doctoral level. Non-degree-granting institutions offer vocationally oriented programs in multiple semi-professional and technical fields and award diplomas and certificates upon completion of two- and three-year programs (ibid.).

Table 4 shows the gross enrolment ratio (GER) and net enrolment ratio (NER) by education level for the year 2013. The NER quantifies the total number of students in the theoretical age group for a given level of education enrolled in that level, expressed as a percentage of the total population in that age group. The GER quantifies the number of students enrolled at a given education level, irrespective of their age, as a percentage of the official school-age population corresponding to the same level of education. For example, for the primary education level, the GER sets the actual number of students in primary education in relation to those who are in the official age to attend primary education[10].

[9] The size of the boxes does not coincide with the actual size or importance of the program in the education system.

[10] A gross enrollment ratio of 100 corresponds to a situation where each child in a given country is enrolled in primary education. A value above 100 could occur due to students who are older than the typical enrolment age for primary education (e.g. have to repeat grade, adult learners). A value below 100 implies that not everyone who is in the typical age for primary education is actually enrolled.

Table 4: Gross enrolment ratio (GER) 2013

Educational level	ISCED 2011	Net Enrolment Ratio	Gross Enrolment Ratio
Early childhood educational development programs	010	*n/a*	*n/a*
Pre-primary education	020	*n/a*	73.64
Primary education	1	99.5	100.57
Secondary education	2 – 3	92.2	109.93
Lower secondary education	2	99.9	99.88
Upper secondary education	3	84.5	119.05
Percentage enrolled in vocational secondary education	2-3	*n/a*	*n/a*
Compulsory education age group	1-3	*n/a*	*n/a*
Post-secondary non-tertiary education	4	*n/a*	*n/a*
Tertiary education	5 – 8	*n/a*	*n/a*
Short-cycle tertiary education	5	*n/a*	*n/a*
Bachelor or equivalent level	6	*n/a*	*n/a*
Master or equivalent level	7	*n/a*	*n/a*
Doctoral or equivalent level	8	*n/a*	*n/a*

Source: (UNESCO, 2017b).

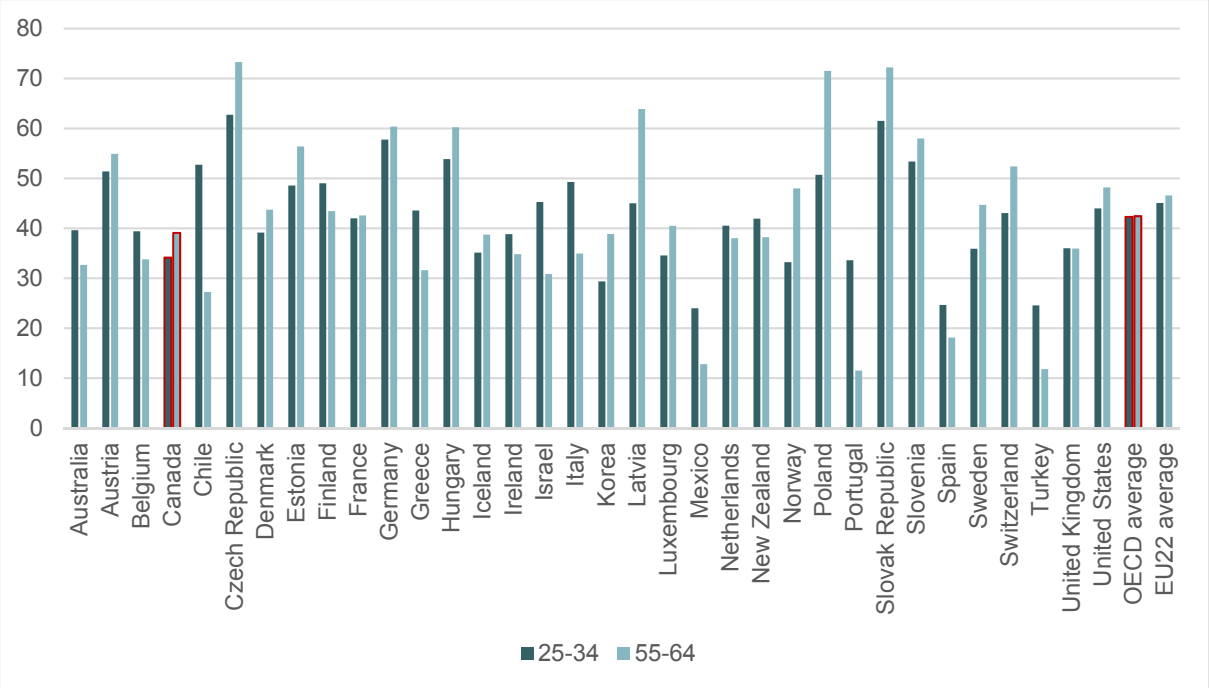
Table 4 reveals a very high level of NER across primary (NER of 99.5) and secondary (NER of 92.2) education. This could be due to the fact that education is compulsory at these two levels. The percentage difference between lower and upper secondary could be due to secondary schooling only being compulsory until age 16 in certain regions as well as students leaving secondary school in upper secondary to enrol in a vocational path (approximately 6 percent according to the OECD) ((2015d).

In comparison, enrollment at the primary (GER of 100.57) and secondary (GER of 109.83) level was over-proportional relative to the respective age-cohort. This is not surprising, as it corresponds to compulsory schooling. However, the over-proportional enrolment rate indicates that part of the students has had to re-take grades. In fact, the OECD states that in 2014, 3.8 percent of primary students and 4 percent of secondary students had to repeat a grade while 0.5 percent had to repeat a grade at the primary and secondary level (OECD, 2014). The large difference at upper secondary level between NER and GER enrolment rates could be due to the number of students that begin vocational programs and later finish their secondary school diploma at an older age (OECD, 2015e)

Enrolment in pre-primary education was relatively low. Measured at GER: only 76.54 percent of all children in the pre-primary school age attended pre-school. One reason for this low enrolment rate could be that attendance is optional in most jurisdictions (Statistics Canada, 2016).

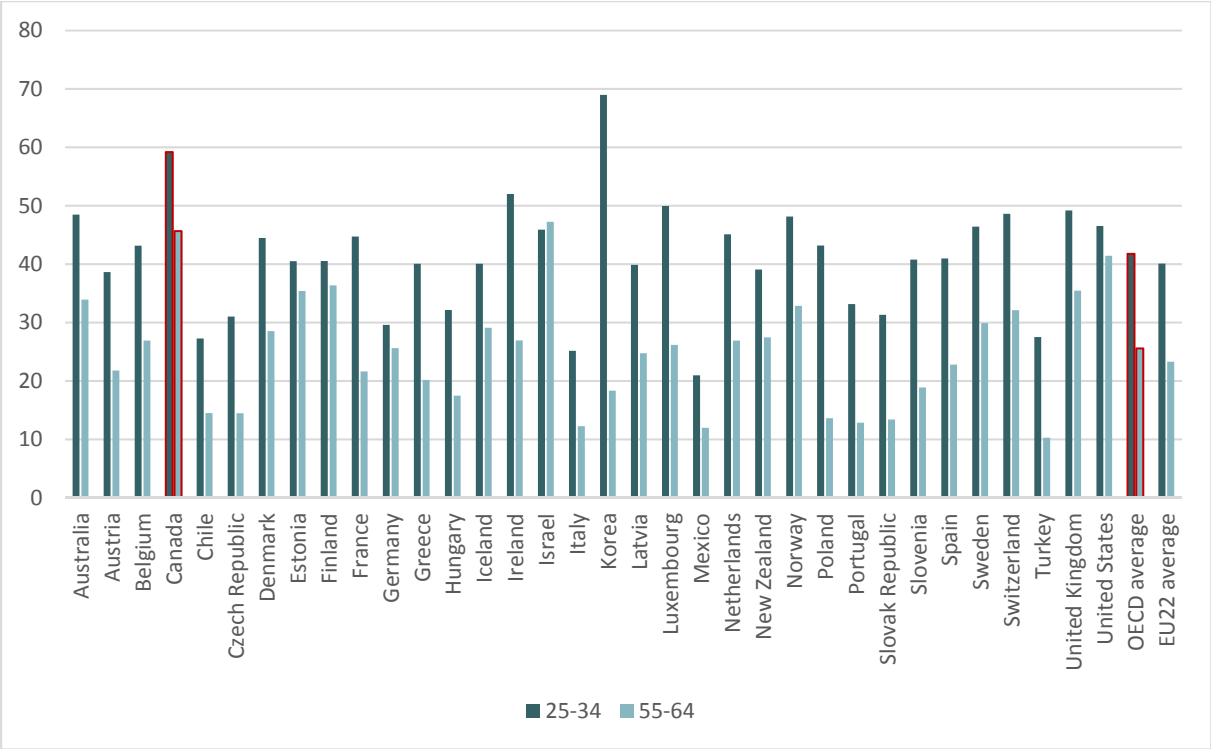
Figure 4 and Figure 5 illustrate the percentages of population in all OECD countries that have attained up to upper secondary education or up to tertiary education respectively in 2015. The percentage of Canadians that have studied until upper secondary education is rather low with 34 percent of the 25 to 34 year olds and 39 percent of 55 to 64 year olds. The figure is below the OECD average of 42 percent for both age groups. One reason that could explain this low figure is that actually a large number of Canadians continue to pursue a tertiary education. This becomes apparent when examining Figure 4 where 59 percent of Canadian adults aged of 25 to 34 have completed tertiary education. Therewith, Canada ranks second highest behind Korea in the 25 to 34 age group category for tertiary education, largely exceeding the OECD average of 42 percent. In the age category 55 to 64, 46 percent of Canadians have obtained up to a tertiary education. Similarly, in this category Canada ranks second highest behind Israel and is largely above the OECD average of 26 percent.

Figure 4: Percentage of population that has attained upper secondary or post-secondary non-tertiary education in OECD countries (2015)



Source: (OECD, 2016a).

Figure 5: Percentage of population that has attained tertiary education in OECD countries (2015)

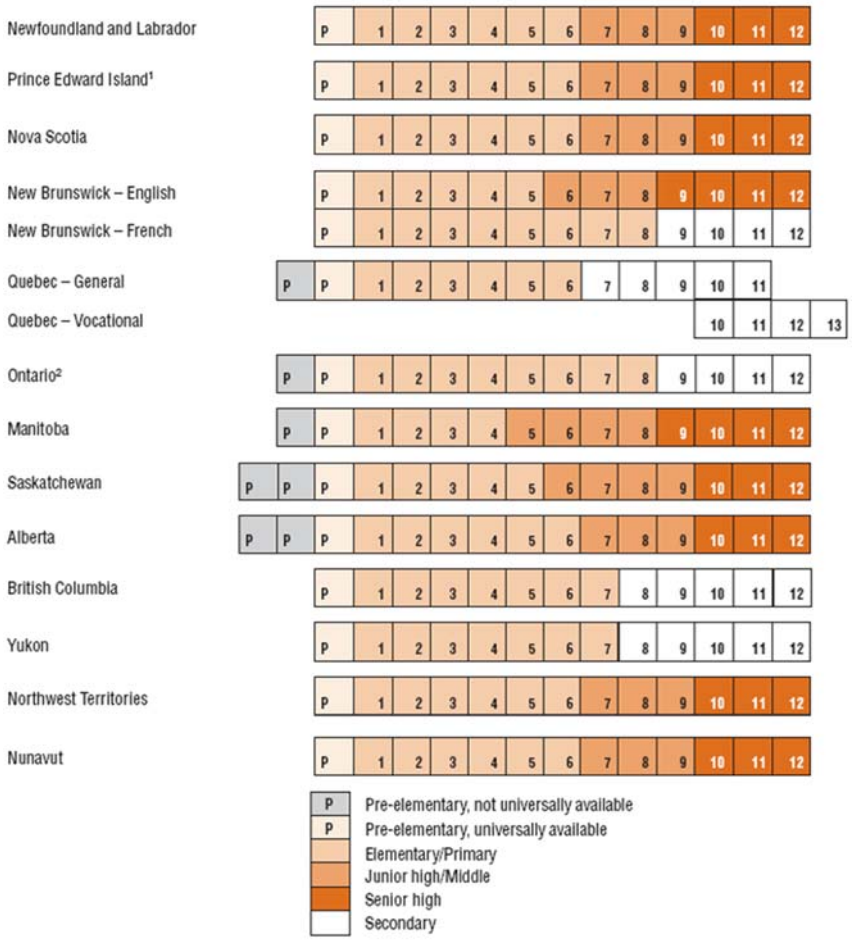


Source: (OECD, 2016a).

2.1 Pre-Primary Education

Pre-primary education offered by either federal, public or private institutions is available to children of usually four or five years of age in all provinces/territories. Schools for visually or hearing impaired are also available. The intensity also varies across provinces/territories, with some offering full-day programs, other offering half-day programs, and some both. However, attendance is only mandatory in the territories of Nova Scotia and New Brunswick. (Statistics Canada, 2016).

Figure 6: Levels within pre-elementary and elementary-secondary schools, by jurisdiction



Source: (Statistics Canada, 2016)

The duration of pre-elementary programs is one year in the majority of Canadian provinces/territories with the exception of Quebec, Ontario, Manitoba, Saskatchewan, and Alberta, which offer two or up to three years (Figure 6). Quebec offers a supplementary year of pre-primary schooling to 4 year olds that are disabled or come from low-income families. In Ontario, all school boards[11] also provide an additional year of pre-elementary education funded by the Ministry of Education. Children in Manitoba are also offered one additional year of pre-primary education. However, the offering falls under the responsibility of each school division. Currently, only two school divisions offer such a program, which is not funded by the Department of Education. In the province of Saskatchewan, two supplementary years of pre-primary schooling are funded in schools in communities where a significant portion of children are not fully prepared for participation in learning opportunities offered to kindergarten and grade one students. These programs are optional and not universal. Similar to Saskatchewan,

[11] Schools in certain local areas are managed by school boards, also referred to as school districts, school divisions or school education councils. School boards manage: buildings, staff, administration and student enrollment.

Alberta also offers two additional years of pre-elementary schooling. The program however, is offered to children with disabilities or who are considered gifted (Statistics Canada, 2016).

Apart from public programs, all jurisdictions count with private schools that also offer either one or more years of pre-primary schooling (Statistics Canada, 2016).

2.2 Primary and Secondary Education

As mentioned in the beginning of section 2, ages for compulsory schooling vary from one province/territory to another. Most provinces/territories require schooling from age six or seven as of a certain date specified in each province's/territory's legislation (age 5 in New Brunswick and British Columbia) to age 16. In New Brunswick and Ontario, education is compulsory to the age of 18 or until graduation (ibid.).

In all provinces/territories except Quebec, primary and secondary education consist of 12 years (see Figure 6). The Québécois elementary and secondary education system consists of six years of elementary school followed by five years of secondary school (ibid.).

Grade organization also varies by province/territory and can even defer within territories at a local level. Elementary schools usually cover the initial four to eight years of compulsory education. Children can subsequently proceed to a middle school or to an intermediate or junior high school that usually cover grade six or seven to eight to nine or enrol directly in a secondary education program. The divisions 6 + 3 + 3 (elementary + junior high + senior high school), 8 + 4 (elementary + secondary), 6 + 6 (elementary + secondary) are the most common. Due to grade organization variation among provinces/territories, the point of transition between primary and secondary school varies (Nuffic, 2015; Statistics Canada, 2016; CMEC, 2008b).

The primary school curriculum focuses on the basic subjects of mathematics, languages, science, social studies, health and physical education as well as introductory arts.

Secondary education is mainly general in nature, with a basic curriculum of science, mathematics, English, social studies, visual arts and physical education. In addition, the option of taking vocational technical subjects is also available, depending on school and region. The proportion of available options increases in the later secondary years in order to allow students to take specialized courses to prepare for the job market or meet entry requirements to enter post-secondary institutions. In the majority of cases, vocational and academic programs are offered within the same secondary institution. However, it is also possible, that technical and vocational programs are offered in separate dedicated vocational training centres. Students who may be interested in a specific trade can attend programs that lead to diplomas and

certificates. These programs vary in length from less than a year to up to three years, depending on the specific trade (CMEC, 2008b; Nuffic, 2015). For more details, see section 3.1.

A high school graduation diploma is awarded to all graduates at the end of grade 12, regardless of the program taken. The minimum number of credits that must be obtained in the last two to four years in order to obtain a High School diploma varies among provinces/territories. This total lies around 30 credits (Ontario), 18 credits (English curriculum) and 20 credits (French curriculum) (New Brunswick), or 80 credits (British Columbia, Dogwood diploma). Credits may be awarded for compulsory subjects and electives, as well as for non-academic subjects, such as community service (Nuffic, 2015).

Compared to the other provinces/territories, Quebec has a completely different general education system. French is the main language of education. In Quebec, a *Diplôme d'Études Secondaires (DES)* is awarded after six years of primary and five years of secondary general education. Students who wish to continue studying must complete another two years at a *Collège d'Enseignement Général et Professionnel (CEGEP)*. At the end of this programme, they are awarded a *Diplôme d'Études Collégiales (DEC)*. Students, who have obtained a DEC with the designation *préuniversitaire* (pre-university), are granted entry to universities in Quebec. The DEC has a number of different subject clusters, such as natural sciences, languages and arts and humanities. CEGEPs also offer 3-year vocational, professional programmes that prepare pupils for entry into the labour market. Pupils who complete this programme are also awarded a *Diplôme d'Études Collégiales*. It is also possible, in individual cases, to get access to higher education in a related study field (ibid.).

Public funding at pre-primary, primary and secondary levels is made available either directly by the provincial or territorial government or through a mix of local taxes collected by the local government or by school boards and provincial/territorial transfers. Private school funding comes mainly from fees and endowments. Quebec is the only exception to this, providing funds for private schools which have discretion over admission criteria. The provinces of Alberta and Manitoba also provide a small degree of provincial funding to private schools that meet certain specific requirements (Statistics Canada, 2016).

2.3 Postsecondary /Higher Education

2.3.1 Apprenticeship Vocational and Technical Training

Vocational programs such as apprenticeships or similar programs aiming at the preparation for employment in a specific occupation or trade have traditionally not required secondary school graduation. However, these requirements have slowly been transitioned to requiring

high school graduation, particularly in trades that are involved with advanced technology or impact public safety.

According to the *Report of the Pan Canadian Education Indicators,* an apprenticeship-training program "involves a contract between an apprentice and an employer, registered with the jurisdiction, in which the employer provides the apprentice with training and experience for a trade" (2016). Apprenticeship programs differ in length. Depending on the trade, programs can range from two to five years combining on-the-job experience with four to eight week periods of in-class training each year. Most provinces/territories combine the in-class portion (usually taken at a postsecondary institution) with the on-the job training. In Quebec however, students receive in-class training before beginning the apprenticeship program. For more details, see section 3.2.

Each of the over 200 registered trades in Canada have specific standards as well as training requirements stipulated by each province/territory. For some trades specific apprentice training and certification is compulsory in order to practice the trade. Other trades do not require certification although individuals may choose to obtain certification regardless, to indicate a specific level of competence. Although compulsory and voluntary certification in trades varies by jurisdiction, similarities exist in that compulsory training and certification is required in trades involving public safety or advanced technology. As of November 2015, all Canadian provinces and territories have agreed on interprovincial standards for 57 trades through the Red Seal program, which provides tradespersons with automatic professional recognition across Canada (Statistics Canada, 2016; Red Seal Excellence Program, 2016). For more information on the Red Seal Program, see the Red Seal Program in section 3.2.1.

2.3.2 Degree and Non-degree Granting Institutions

Upon successful graduation from high school, students can also apply to university or college programs. A major distinction is made across all provinces/territories between "degree-granting" and "non-degree-granting" institutions. Degree granting institutions can be public or private and include universities, university colleges and a limited number of community colleges. Universities typically offer four-year undergraduate programs leading to bachelor's degrees. Advanced degrees include master's degrees, usually requiring two years of study after a first degree, and doctoral degrees, requiring three to five years of postgraduate study and research as well as a thesis. Not all universities offer advanced degrees, especially at the doctoral level. Although the primary emphasis of both universities and university colleges is on degree programs, diploma and certificate programs are also available. Various territories have also began giving limited degree granting authority to community colleges. Although community colleges mainly offer diploma and certificate programs, they may also offer two-

year associate degrees or three- to four-year applied degrees in an area of specialty particular to the institution (Statistics Canada, 2016).

Non-degree granting institutions in Canada were created at a provincial and territorial level in the 1960s to provide higher professional education in the form of labor market preparation programs as an alternative to the more theoretically oriented programs of universities. These institutions are referred to differently depending on the province or territory. Common names include: colleges, regional colleges, centers, colleges of applied arts and technology, or community colleges. In Quebec, these are called *collèges d'enseignement général et professionnel (CEGEPs)* (ibid.).

Colleges offer vocationally oriented programs in a wide range of semi-professional and technical fields, awarding diplomas, certificates, attestations (only in Quebec) and associate degrees (Associate of Arts or Sciences). Diplomas are issued after completion of two to three year programs and certificates after one year. Associate degree programs are more academic and are often seen as preparatory programs for academic or university education. Students with an associate degree are allowed to enter a bachelor's program in the second year. In Quebec, attestations are issued upon the completion of shorter technical programs, and are generally viewed as the equivalent to certificates awarded in other jurisdictions (Nuffic, 2015; Statistics Canada, 2016).

Funding at the postsecondary level is dependent on the nature of the institution. For public degree and non-degree granting institutions, public funding comes from the provincial or territorial level in the form of capital grants. The federal government can also provide public funding although mostly for sponsored research. Private funding is mainly composed of tuition, donations, investments or other fees (Statistics Canada, 2016).

2.4 Continuing Education (Adult Education)

A variety of institutions, provincial/ territorial governments and groups are involved in adult education programs with the providers varying by provinces/territories. Non-degree granting institutions such as colleges offer adult education and training courses for the labour force. Government departments responsible for skill training, literacy, second language training and other adult programs may provide programs themselves or subsidise formal or non-formal educational bodies for the development and delivery of the programs. Certain jurisdictions such as Ontario have established dedicated adult centres. Non-profit community based organizations, school boards and a number of private companies (mainly funded by the provincial, territorial or federal governments) address literacy and other learning needs for

adults. Additional focus is also placed on specific groups such as immigrants, rural populations, Aboriginal communities or displaced workers (CMEC, 2008b).

2.5 Teacher Education

There are 50 Canadian faculties of education. At the end of World War II, the responsibility for teacher education fell solely on universities. The University of British Columbia and the University of Alberta host the two largest and oldest teacher education programs (Guo & Pungur, 2008). Universities offer Bachelor of Education (B.Ed.) degrees, combined degrees, and after-degrees in a variety of specializations in the elementary (kindergarten to grade six) to secondary level (grades seven to 12) as well as in adult routes. Diplomas are also available for professionals that wish to enrich their qualifications (ibid.).

3. The System of Vocational and Professional Education and Training

This section of the Factbook describes the vocational education and training (VET) system at the upper secondary level and the professional education and training system (PET) at the tertiary level in more detail. Thereby, the term vocational and professional education and training (VPET) refers to both, the VET and the PET system.

Table 5: Characteristics of the Canadian VET system

VET pathway enrollment share out of all upper secondary (%)	**6%** - At the upper secondary level, only a small percentage of students – primarily in Quebec – are enrolled in pre-vocational/vocational programmes (6 percent compared to 44 percent on average in OECD countries in 2012) (OECD, 2015d).
Program enrollment share out of all VET pathway (%)	**Apprenticeship: 50% (approx.) College: 50% (approx.)** **Registered Apprentices 2015: 453'543** **Enrolled College Students 2015: 727'680** According to the OECD, in 2009-2010, slightly more than 800,000 students enrolled in either apprenticeships or college programs compared with 1.2 million students enrolled in university. These 800,000 enrolments were split almost equally between apprenticeships and college programs (OECD, 2015f)
Number of curricula/qualifications	Red Seal Apprenticeship Trades (interprovincial mobility guaranteed): **57** Regionally recognized: (province specific ranges from): **47-140**
Ø Share of time spent in workplace (vs. classroom)	**80%**
Work contract (Yes/No)	**Yes**
Ø Share of vocation-specific content (vs. general) in classroom education	**Classroom Education is trade specific**
Classroom/workplace sequencing (Alternating, Sequentially)	**In 8 week blocks, yearly.** Some trades can include up to12 weeks.
Frequency of workplace learning (Annually, Semi-annually, quarterly, monthly, weekly)	?
Program duration (Years)	**Trade Specific, from 2-4 years**
Involved Actors	**Employer, Apprentice, In-school Training provider**
Reform Years	**Currently undergoing reforms in Ontario**

	1996 Quebec **2003 British Columbia** **2000 Ontario** **1996 Alberta**
Reforms Summary	**Making apprenticeship policy industry-driven, shifting governance from legislative regulation to sectoral committees composed of employer and labor associations.**

3.1 Upper Secondary VET

The Canadian VET system is mainly concentrated at the post-secondary level in public or private technical and vocational institutes or colleges. At the upper secondary level, only a small percentage of students – primarily in Quebec – are enrolled in pre-vocational/vocational programmes (6 percent compared to 44 percent on average in OECD countries in 2012). This figure illustrates the structure of Canadian secondary systems, which, in virtually all provinces and territories, do not have a prominent vocational track (OECD, 2015d).

In the following, we shortly refer to the VET track in Quebec, which is the biggest of it's sort in Canada. In addition, we shortly refer to other VET programs at the secondary education level in other provinces.

VET in Quebec

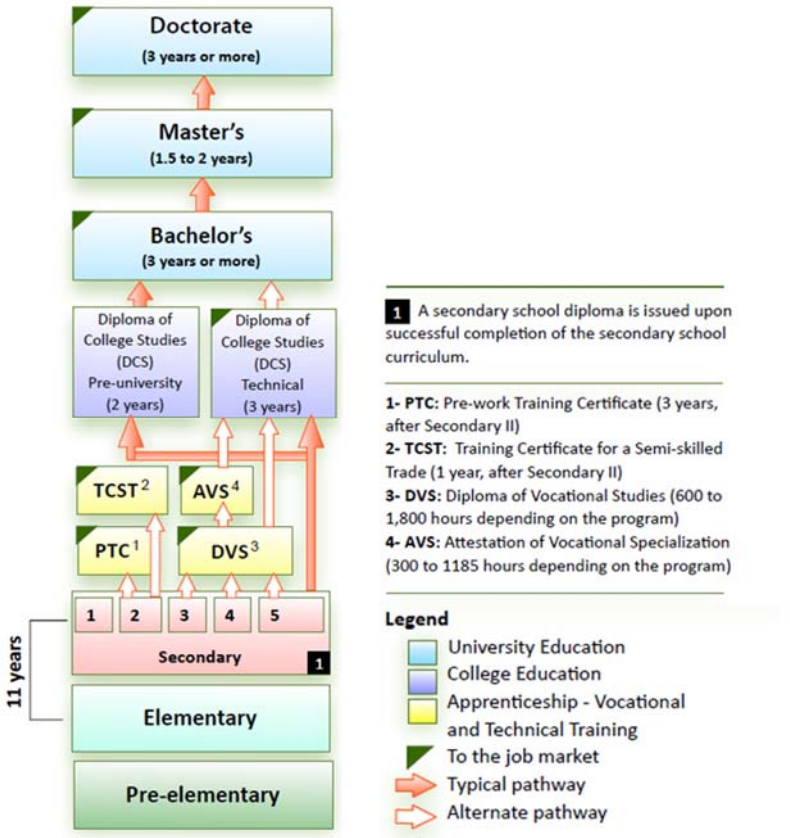
According to the OECD, Quebec is the only province in Canada that offers VET instruction through a vocational track at the secondary school level (see Figure 7) (OECD, 2015f). Students at the second cycle of secondary school level (after secondary 2) in Quebec can follow three distinct educational pathways, a general education path, an applied general education path and a work oriented training path.

The work-oriented program provides young students with a high dropout risk an opportunity to continue their education and earn a certificate, which enables them to enter the labour market. Students in their second year of secondary school can choose between two streams of the work-oriented program (see Figure 7): pre-work training or training for a semi-skilled trade. Pre-work training lasts three years and awards students with a pre-work training certificate (PTC), which provides access to the labour market to positions such as a general assistant in a grocery store. Training for a semi-skilled trade lasts one year awarding students with a Training Certificate for Semi-skilled Trade (TCST). It provides access to the labour market for positions such as butcher helper or mechanical assistant (Ministry of Education Quebec,

2014). In both streams, part of the training takes place in school and focuses on both general education (mathematics, languages…) as well as practical training courses that prepare students for the job market. Additionally, a second part of the practical training consists of practicums in a work place (ibid.).

The general and the applied general education program enable students to continue their education, and can lead to a secondary school diploma, further vocational training or to college level education. Both pathways (general and applied general) cover six areas of learning: (1) Languages; (2) Mathematics, Science and Technology; (3) Social Sciences; (4) Arts Education; (5) Personal Development; and (6) Career Development (GE optional). The main difference is that Science and Technology programs are different, even though they address similar skills: Science and Technology in GE and Applied Technology and Science in Applied GE. The Personal Orientation Project program (POP) is optional in the GE path but compulsory in the Applied GE path.

Figure 7: The Education System in Quebec



Source: Adapted from (CMEC, 2010).

Students following both the general or the applied path can chose to obtain a diploma of vocational studies (DVS) in the third or fourth year of secondary school, depending on the selected program. The DVS programs last between 600 and 1,800 hours, extending over a

one- or two-year period, preparing students for direct labour market entry. The DVS aims to ensure that students acquire work-related skills, and are prepared for labour-market tasks, fostering their occupational mobility (Ministry of Education Quebec, 2014; CPRN, 2008).

If students who have completed a DVS decide to continue their education at the upper secondary CEGEP level (*Collèges d'Enseignement Général et Professionnel)*, they have two options to do so. The first option is through bridging courses (only available for a limited number of 1800-hour DVS programs) the second option is to complete their secondary school diploma at a later stage through adult education programs. Additionally, students can attend the Attestation of Vocational Studies (AVS) program, which allows holders of a DVS to specialize in their trade. Students can be admitted to a program of studies leading to an AVS if they hold the DVS required by the specific program of study. Completion of 450 to 900 hours of training in a program offered in a vocational education centre leads to an AVS. Similar to the DVS, students who wish to continue pursuing education at the upper secondary (CEGEP) level must obtain a secondary school diploma (CPRN, 2008; Ministry of Education Quebec, 2014).

VET in other provinces

A number of provinces offer pre-vocational programs during upper secondary education as a form of complementing secondary education with vocational skills. The Specialist High Skills Major (SHSM) in Ontario is an example of vocational education offered parallel to general education programs offered by high schools. This program allows grade 11 and 12 students to customize their high school experience through a variety of enhanced learning options. An SHSM is a ministry-approved specialized program allowing students to acquire skills for a specific economic sector while, at the same time, meeting high school graduation requirements. The program also helps the transition to apprenticeship training, college, university or the workplace. SHSMs are available in all public schools in Ontario. Students who successfully complete the program receive an Ontario Secondary School Diploma with an embossed SHSM seal together with a formal recognition on the Student transcript and a record of achievement (Ontario Ministry of Education, 2017).

SHSMs are available in the following sectors: agriculture, arts and culture, aviation/aerospace, business, construction, energy, environment, food processing, forestry, health and wellness, horticulture and landscaping, hospitality and tourism, information and communications technology, justice, community safety, and emergency, services, manufacturing, mining, non-profit, sports and transportation (ibid.).

Other provinces also offer similar programs such as the secondary school apprenticeship or accelerated credit enrolment in Industry training in British Columbia, the Registered

Apprenticeship Program in Alberta or the High School Apprenticeship Program in Manitoba (Government of British Columbia , 2017; Government of Alberta, 2017; Government of Manitoba, 2017a).

3.2 Post-Secondary VET: Apprenticeships and College programs

Post-secondary VET in Canada is an accessible form of skills development with the aim of being responsive to the labour market needs. High levels of college attainment and good labour market outcomes for VET graduates reflect this. VET can essentially be described as a program/ series of courses that provide specialized education in a skill or trade at the post-secondary level. A large number of educational institutions located across Canada (including rural and remote areas) promote access to VET (OECD, 2015e).

There are two main forms of post-secondary VET in Canada: apprenticeships and College programs. According to the OECD, in 2009-2010, slightly more than 800,000 students enrolled in either apprenticeships or college programs compared with 1.2 million students enrolled in university. These 800,000 enrolments were split almost equally between apprenticeships and college programs (OECD, 2015f). In contrast, in 2015, there were 452,543 students enrolled apprenticeships and 757,680 students enrolled in college versus 1,307,277 in university (Statistics Canada, 2017d; Statistics Canada, 2017e).

3.2.1 Apprenticeship Training

Apprenticeship training is offered in a variety of trade professions. An apprenticeship is essentially an agreement between a person who wants to acquire a certain skillset (the apprentice) and an employer requiring skilled labour. The employer agrees to the provision of on-the-job training under the supervision of a certified journeyperson. Journeypersons are individuals that have extensive experience in a given trade and have completed an examination that certifies them to train and a mentor apprentices. In exchange for training and mentoring, the apprentice works at a lower wage than the firm would pay a skilled worker (OECD, 2015e).

Employers, unions as well provincial and territorial apprenticeship authorities develop the competencies an apprentice must learn, as well as the overall model for training. Apprenticeships combine on-the-job experience with technical classroom training. Approximately 80 percent of the training is on-the-job. The remaining part takes place off the job, usually in a college or union training centre and in 4-12 week blocks per year. Upon completion, apprentices receive a trade qualification. Depending on the trade, apprenticeship programs usually last between two to five years (OECD, 2015f; OECD, 2015e)

Formally speaking, apprenticeships are no postsecondary programs, since high school completion is not usually an entry condition. Most provinces and territories require a minimum age of 16. However, an increasing number of apprenticeship positions (especially those that deal with technology and public health issues) are beginning to require high school graduation. Additionally, most registered apprentices are between 20 and 34 years old, on average older than college and university students and perceived as employees rather than as students (ibid.).

Apprenticeship qualifications are not automatically recognized at a national level. To earn a nationally recognized qualification in their trade, apprentices need to take an additional test, the so-called Red Seal Examination. This will be explained next.

The Red Seal Program

Since its creation in the 1950s, the Red Seal Program enables the co-operation between the provincial/territorial and federal governments in developing industry-defined standards for workers in skilled trades. The current program is the result of a half-century of successful collaboration at a federal-provincial/territorial level (in close collaboration with industry) to develop nation-wide occupational standards and examinations for Red Seal Trades (OECD, 2015e; OECD, 2015f).

Apprentices who have successfully completed their training (as well as trade qualifiers[12]), have the possibility of obtaining an endorsement of their provincial/ territorial certificates of qualification by undertaking the interprovincial red seal examination. The examination is held in the form of a multiple-choice exam and available in both official languages. Successful completion of the examination will make the apprenticeship certificate of qualification automatically recognized across all jurisdictions of Canada, enabling interprovincial mobility. In 2016, 76 percent of apprentices and 59 percent of trade qualifiers successfully passed the examination. As of November 2015, national examinations for 57 trades representing over 80 percent of apprentices are available. For a complete list of trades, see Table A12 in the Appendix (Red Seal Excellence Program, 2016).

3.2.2 Colleges and Union Training Centres

Publicly Funded Colleges, Institutes and Polytechnics

[12] tradespersons who meet required jurisdictional criteria without completion of an apprenticeship program (usually through the demonstration of breadth of experience by accumulating and documenting a required number of hours)

Publicly funded colleges, institutes and Polytechnics offer post-secondary VET through one-year certificates, two-year technical diplomas, three-year technologist diplomas and up to four-year degree programmes. Apprenticeship block training (see 3.2.1) can also take place in a college. These institutions are intended to meet the needs of local labour markets, providing practically oriented, occupation-specific programs enabling participants to acquire skills and knowledge necessary for an employment in a particular trade or occupation. Polytechnics differentiate themselves through the ability to grant bachelor's degrees in specific areas and are typically larger institutions. However, an increasing number of colleges also conduct applied research and grant degrees without adopting the polytechnic designation (OECD, 2015f; OECD, 2015e)

Private colleges also play an important role in the provision of VET training. Private career colleges are privately owned educational institutions that offer programs similar to those offered in public colleges. The main difference is that programs at private colleges are typically shorter in duration, have compressed scheduling[13]and receive no direct public funding. The majority of training programs in these institutions often last one year or less and usually lead to an entry-level position (OECD, 2015e).

As highlighted in section 2.2, secondary students from Quebec who have completed secondary schooling and wish to continue studying must complete another two or three years at a *Collège d'Enseignement Général et Professionnel (CÉGEP),* where they pursue either a two year pre-university program or a three year technical training program that is primarily vocational. The three-year vocational, professional programs prepare pupils for entry into the labour market. Pupils who complete this programme are also awarded a *Diplôme d'Études Collégiales*. It is therefore possible, in individual cases, to get access to higher education in a related study field (Nuffic, 2015; OECD, 2015e).

3.3 Regulatory and Institutional Framework of the VPET System

3.3.1 Central Elements of VPET Legislation

Education is regulated at a regional level in Canada. For this reason, each province/territory has specific Acts that regulate all aspects of VPET legislation per province. In the province of Alberta for example, the Post-Secondary Learning Act sets out the government authority for public postsecondary education in Alberta. The act gives each college and technical institute the authority to govern itself through the operations of a board of governors. Private institutions

[13] Compressed scheduling allows a traditional work-week to be completed in less than the traditional number of workdays. For example, a 40 hour/ week program could be done in four 10-hour days instead of five 8-hors days (Cornell University, 2017).

are governed by separate acts, such as the Private Vocational training Act and the Private Vocational Training Regulation (in Alberta). Each province designates an authority that is in charge of the regulation of apprenticeship programs, such legislation are usually also governed through separate acts such as the Apprenticeship and Industry Training Act in Alberta. Table A13: Relevant VPET Legislation has been put together as a summary of the different Acts that form the central elements of VPET Legislation per province.

3.3.2 Key Actors

a) Vocational Education and Training

Various agents contribute to the Canadian VET System. All relevant actors are briefly described in the following list. As mentioned in section 3.1, Quebec is the only province in Canada that offers VET instruction through a vocational track at the secondary school level. For this reason, the next subsection about Quebec will focus primarily on the key actors that contribute to the VET system in Quebec. The subsequent subsections will focus other important key actors in Canada divided into the categories of Government, Representation and Advisory Bodies and Education and Training Providers. Additionally, for a description of provincial key actors playing a role in VPET curriculum development please refer to Table 8, Table 9, Table 10, Table A14, Table A15 and Table A16.

The case of Quebec

The Ministère de l'Éducation, du Loisir et du Sport (MELS) guides and supports VET development by providing integrated program management, organizing program offerings, and ensuring universal access to education. The MELS handles the educational, physical and material aspects of instruction, develops programs, issues diplomas and funds training activities (Government of Quebec, 2008).

Emploi-Québec, is a government agency that contributes to employment, and workforce development. It has the task of fighting unemployment and is responsible for assessing the needs of the labor market and for managing and directing the apprenticeship program. These activities, which rely on in-depth knowledge of the job market and labor forecasts, are essential in planning which VET programs are to be offered in Québec. In addition, approximately 30 sector committees set up by *Emploi-Québec* work in close collaboration to identify occupational competencies and to run the apprenticeship program. The *Commission de la construction du Québec (CCQ)* also plays a vital role in developing VET programs, given that it is mandated to coordinate the construction industry training system,

making sure that these correspond to industry needs and realities (Government of Quebec, 2008; Emploi Quebec, 2017b).

The *Comité National Des Programmes D'Études Professionnelles et Techniques (CNPEPT)*, composed of representatives from business, labour unions, school boards, CEGEPs, private educational institutions and *Emploi-Québec*, advises the MELS on all important VET issues as well as on program orientations and development (Government of Quebec, 2008).

All Canada

In the following, we again refer to all provinces of Canada.

Government

Education is a regional/territorial competence. Although the Canadian VET system shares common characteristics, the development and delivery of VET varies among the 13 Provinces and Territories. The Council of Ministers of Education (CMEC) acts as a forum where education ministers explore forms of cooperation, address matters of common concern or coordinate international education activities. The importance and necessity of skilled labour was on the first CMEC agenda in 1967 and continues to be of critical importance (OECD, 2015e).

Despite not having a federal ministry of education, the Government of Canada is still responsible for the performance of the national economy through a well functioning the labour market and a skilled labour force. The federal Department of Employment and Social Development Canada (ESDC) works to improve the standard of living and quality of life for all Canadians by promoting a highly skilled labour force and an efficient, inclusive labour market (Government of Canada, 2017a). This is achieved through transfers to provinces and territories, grants, tax measures, student financial assistance, and direct program spending in support of VET. Federal investment in VET targets primarily market participation of underrepresented groups (Aboriginal people, persons with disabilities) and unemployed individuals in the labour market (OECD, 2015e).

Canada's apprenticeship system is regulated at a provincial and territorial level. For this reason, in every province different actors are in charge of the development of the apprenticeship system. The provinces of New Brunswick and Quebec primarily support a government-led approach when it comes to the governance and quality assurance of the apprenticeship system. In New Brunswick, the Apprenticeship and Occupational

Certification Branch of the Department of Post-Secondary Education, Training and Labor is in charge of this function (OECD, 2015e).

In the provinces of Manitoba, Prince Edward Island, Alberta and Saskatchewan the provincial government designs the legislative and administrative framework for the delivery of apprenticeship training and certification. The Ministry of Advanced Education in Alberta, the Department of Workforce and Advanced Learning in Prince Edward Island and the Saskatchewan Apprenticeship and Trade Certification Commission are the responsible institutions. In Manitoba, Apprenticeship Manitoba[14] (AM) together with the Apprenticeship and Certification Board oversee the legal framework and set the standards for training and certification (OECD, 2015e; Alberta Advanced Education, 2017; Government of Manitoba, 2017b; Government of Prince Edward Island, 2017; Saskatchewan Apprenticeship and Trade Certification Comission , 2017).

The Red Seal Program (see section 3.2.1) is managed by the Canadian Council of Directors of Apprenticeship (CCDA), which is composed of the apprenticeship authorities from each province and territory together with representatives from the Government of Canada. The Government of Canada is represented by the ESDC, which provides the administrative duties and strategic support to the CCDA for the management and delivery of the program and largely funds its day-to-day operations (OECD, 2015e).

Representation and advisory bodies

In the provinces of Ontario and British Columbia the trades sector plays a fundamental role in governance and quality assurance of apprenticeship programs. The Ontario College of Trades and Apprenticeships is an industry-driven, professional regulatory that protects the public by regulating skilled trades in Ontario. It is governed by a 21-member board composed of 16 members from the skilled trades, four members of the public, and one member representing Ontario's colleges of applied arts and technology (Ontario College of Trades, 2017). Similarly, in British Columbia the Industry Training Authority (ITA)) leads and coordinates British Columbia's skilled trades system and works with employers, employees, industry, labour, training providers as well as government to issue credentials, supports apprenticeships, fund programs, set program standards and increase opportunities in the trades (ITA, 2017; OECD, 2015e).

[14] A branch of the Department of Education and Training of the Government of Manitoba.

Education and training providers

For a comprehensive description of the different type of institutions that provide educational and training, see section 3.2.2. Factors such as the increased mobility of learners, the rising number of institutions that have degree granting status and the growing use of information technology are leading territories and provinces to place large focus on the quality of post-secondary vocational education. The main responsible actor in ensuring and maintaining post-secondary program quality is the teaching institution itself, which operates legislative and policy frameworks established by their respective provincial or territorial governments (OECD, 2015e).

Nation-wide organizations that promote quality and maintenance of high academic standards in post-secondary educational programs such as Colleges and Institutes Canada (CiCan) are also present. CiCan acts as the collective voice of Canada's publicly supported colleges, institutes of technology, CÉGEPS, polytechnics and universities with a college mandate. It works together with governments, industry and other stakeholders to promote employment-focused post-secondary education that ensure that all Canadians have access to training opportunities that will prepare them for a fulfilling career in the field of their choice. This is done by ensuring that its members (over 124 colleges) meet academic standards set by the appropriate jurisdictional authorities (CICan, 2017; OECD, 2015e).

A large number of Canada's regulated professions[15] have professional groups (associations or professional colleges[16]) that carry out accreditation reviews of the post-secondary programs related to their professions. These professional groups review reports provided by the institutions, and may additionally conduct on-site visits in accordance with the policies and procedures established by their respective professions. In nursing, for example, provinces have a college of nurses that sets the standard and approves curricula for college programs (OECD, 2015e).

Every College program, or related program cluster, has Program Advisory Committees (PACs) to ensure curriculum quality, student and graduate success. PACs are a group of community and business leaders from outside public or private colleges that advises academic administration and teachers on the skills requirements and hiring prospects in an occupation linked to the instructional program. They advise on the need for new programs and participate

[15] In Canada, approximately 20 percent of jobs are regulated to protect the health and safety of Canadians. The list of regulated professions is broad and includes occupations such as Air traffic controllers, architects, chiropractors, chemists, optometrists, nutritionists, plumbers, veterinarians, etc. A full list is available here: https://www.cicic.ca/928/Find-out-if-your-occupation-is-regulated-or-not/index.canada.

[16] A list of the of professional colleges and associations by province is available here: http://www.pstranslations.ca/list_prof_org.html.

in their development and quality assurance. Committee members also assist in identifying industry resources, including guest speakers, field placement, co-op and graduate employment opportunities. Program Advisory Committee members are key liaisons between the College and industry and between the College and the community (too read more on PACs see section 3.5.1) (Seneca College, 2017; OECD, 2015e).

3.4 Educational Finance of the VET System

The following section provides detailed insights into the financing of the Canadian educational system. In particular, the financing of the post-secondary VET system is examined. The most recent available information regarding Canadian expenditure on education dates back to the year 2013-2014. During the period 2013-2014, total expenditure for education amounted to CAN$ 114.86 Billion (see Table 6).

Table 6: Public and Private Expenditure on Educational Institutions, by Level of Education, Canada, Provinces and Territories in Millions of Current Dollars (CAN)

Level of Education	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
All levels combined	91'666	96'076	103'536	107'713	108'767	110'347	114'858
Pre-elementary, elementary-secondary	53'931	57'636	60'521	62'920	63'454	64'829	66'816
Post secondary levels combined	37'735	38'440	43'015	44'793	45'313	45'518	48'043
College	13'971	15'219	14'502	15'923	15'693	15'995	17'287
University	23'764	23'221	28'513	28'870	29'620	29'523	30'756

Source: (Statistics Canada, 2017a).

During this period, 58 percent of total spending (CAN$ 66.82 Billion) corresponded to the pre-elementary, elementary-secondary level. The fact the largest part of the education budget is spent for elementary-secondary could be due to it being compulsory and hence government-subsidized. Post-secondary expenditure accounted for the remaining 42 percent (CAN$ 48 Billion) out of which expenditure accounting to universities was almost twice as high as for colleges (CAN$ 30 Billion versus CAN$ 17.3 Billion). Table 6 also reveals a steady increase in spending from 2007-2008 up until the most recent available data in 2013-2014. During this time, the average increase in expenditure amounted to 4 percent per annum[17].

Table 7 presents an extract of the Financial Information of Community Colleges and Vocational Schools Survey (FINCOL). FINCOL was developed to provide financial information (income

[17] Computed by taking the arithmetic average of annual growth year on year.

and expenditures) on all non-degree-granting community colleges[18] and public vocational schools[19] in Canada. Government and associations primarily use this to improve their understanding of the financial position for this specific level of education. Additionally, FINCOL information is also used for policy development and for impact measurement of federal/provincial support and/or increased tuition fees (Statistics Canada, 2017b). The analysis of sources of revenue for colleges and vocational schools enables the determination of its main sources of funding.

Table 7: Financial Information of Community Colleges and Vocational Schools, Revenues by Type of Fund annual (CAN$ x 1,000)

	2010-2011	2014-2015
Total revenues	9'907'323	10'811'112
Federal	136'868	165'815
Employment and Social Development Canada	45'581	26'887
Natural Sciences and Engineering Research Council	6'135	24'574
Other federal	85'152	114'354
Provincial	6'462'890	6'657'880
Regular Grants	5'797'182	6'148'939
Other provincial	665'708	508'941
Municipal	7'204	16'261
Fees	2'041'597	2'683'459
Post-secondary programs	1'267'820	1'797'848
Trade vocational programs	213'774	194'315
Continuing education programs	303'962	306'376
Other Fees	256'041	384'920
Donations, bequests and non-government grants	122'395	128'770
Rest[20]	1'136'369	1'158'927

Source: (Statistics Canada, 2017c).

Table 7 illustrates how the main source of funding for colleges and vocational schools comes in the form of provincial grants. In the year 2014-2015, grants issued at the provincial level amounted to CAN$ 6.15 Billion (56.9 percent of total revenues). Since education in Canada is a governed at a provincial/ territorial level, it is no surprise that the bulk of funding is paid by the provincial governments. At a federal level, the level of funding is rather small (CAN$ 165.8 Million or 1.5 percent of total revenues). Small contributions come from programs like

[18] Included in the classification of «Community College» are the colleges of applied arts and technology (CAATs) in Ontario, general and vocational colleges (CEGEPs) in Quebec, institutes of technology and other institutions providing education in fields such as paramedical technologies, nursing, agriculture, forestry, nautical sciences, etc. These institutions offer programs at the postsecondary level (university transfer and career programs), and may offer trade-vocational level programs.

[19] Included in the classification of «Vocational School» are Centres of orientation and training for immigrants (COFIs) in Quebec and any other public institutions offering programs at the trade-vocational level only.

[20] «Rest» corresponds to Investment income, Ancillary enterprises, Borrowings and Miscellaneous

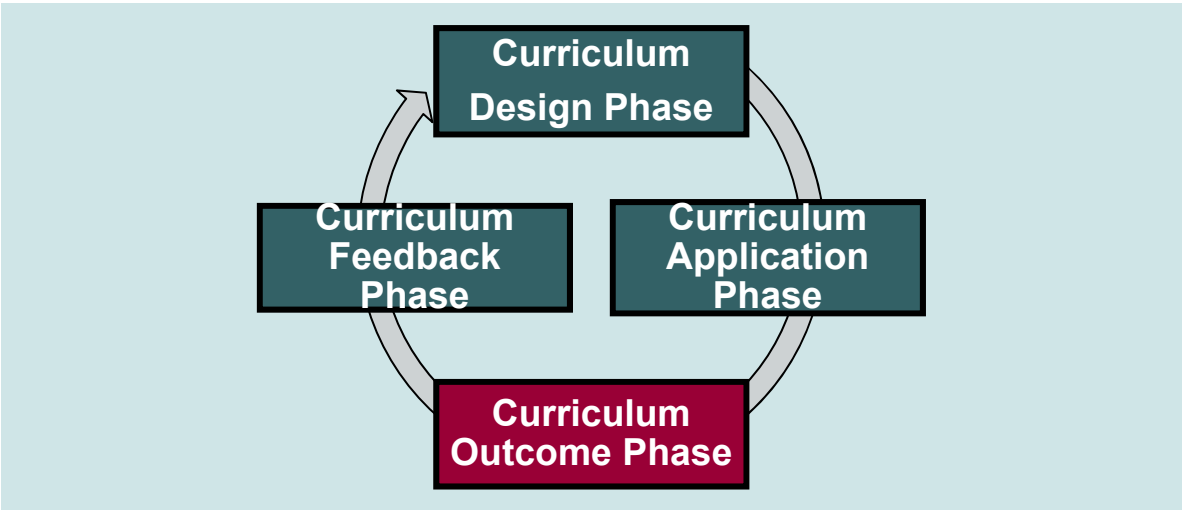
Employment and Social Development Canada, an institution that works to improve the standard of living and quality of life of all Canadians by promoting a highly skilled labour force and an efficient and inclusive labour market. Fees, the direct costs students pay when studying in these institutions, also play a crucial role in funding of community colleges and vocational schools. In 2014-2015, Fees accounted to CAN$ 2.68 Billion or one quarter of total funding (24.8 percent). From remaining share of revenues, CAN$ 128.7 Million came from donations (approximately 1 percent of total funding) and Investments, Borrowings, Ancillary enterprises and Miscellaneous services corresponded to 11 percent of revenues or CAN$ 1.16 Billion.

Comparison between levels for the years 2010-2011 and 2014-2015 (Table 7), reveals almost no change in regards to the proportions of funding. The proportion of provincial funding in 2010-2011 amounted to 65.2 percent compared to 61.6 percent in 2014-2015. Additionally, federal funding played essentially the same role accounting for 1.4 percent in 2010-2011 and 1.5 percent in 2014-2015. The proportion fees play has also remained relatively unchanged accounting for 20.6 percent in 2010-2011 and 24.8 percent in 2014-2015.

3.5 Curriculum Development

The curriculum is a central element for the functioning of a VPET 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 is called the Curriculum Value Chain and is depicted in the picture below (CVC; for more details see (Bolli, et al., 2016)).

Figure 8: Curriculum Value Chain (CVC)



Source: (Bolli, et al., 2016)

In the curriculum design phase, VET curriculum content and qualification standards are decided upon by the relevant actors. Therefore, the discussion in the respective subchapter below focuses on the degree and the amount of stakeholder participation concerning curriculum design in Canada. The curriculum application phase revolves around the implementation of the curriculum. Because learning environments differ heavily across countries—especially with respect to the prevalence of workplace learning—the curriculum application phase subchapter in this Factbook focuses those learning environments. Specifically, it addresses where learning takes place and whether the curriculum dictates both school and workplace learning or only one of the two. Finally, curriculum outcomes can be collected and analysed in the curriculum feedback phase. This evaluation process is important as it may render a more refined curriculum design than was possible in the first place.

3.5.1 Curriculum Design

Designing new post-secondary VPET curriculum or making major revisions to existing college programs is an iterative process that usually involves a number of different players—each bringing a different perspective to program development. Across Canada, there are many different approaches to building program curricula. Each college has an identified process and framework for program development. There are, however, common elements that can be found in most of these approaches. An overview of common, inter-related processes involved in program development will be outlined in the following section.

Initial Program Concept Definition

The first stage logically involves the formation of an initial program concept. In this stage, early in the development process, the curriculum developer establishes an initial description of the program and expands on the reasoning of why this program should be developed. Additionally, the potential learner population that will be targeted is identified. Anticipated graduate abilities together with a summary of key values and beliefs that will shape and guide the program are also provided at this stage. Although many of the initial ideas presented at this stage will evolve as the program develops, an initial exploration provides focus and a shared understanding of the potential of the program (The Exchange, 2017).

Program advisory committees (PACs) with external industry representation develop new program proposals and conduct internal reviews of existing programs. PACs are a group of community and business leaders from outside the public or private colleges that advise academic administration and teachers on the skills requirements and hiring prospects in an occupation linked to the instructional program (Seneca College, 2017; The Exchange, 2017). They assist in:

- Determining the necessity for new programs and / or modifying existing ones
- Identification of trends in a field of study
- Curriculum development
- Identification of hiring patterns
- Establishing links with industry
- Curriculum and learning material assessment
- Shaping the curriculum so that it aligns with workplace needs

The respective college's Board of Governors appoints Program Advisory Committee members. Members are required to spend approximately 15 to 20 hours per year on committee involvement issues, in appointment terms that usually last three years although it varies by institution (British Columbia Institute of Technology, 2017; Seneca College, 2017; The Exchange, 2017).

Situational and Feasibility Study

Before major curriculum work is undertaken, situational and initial feasibility analysis are undertaken. An initial assessment of feasibility is made and later, as the process develops and specific resource needs are ascertained, program viability is reassessed. At this stage, the program advisory committee (PAC) assists with the situational analysis and with the development of the actual curriculum (The Exchange, 2017).

PAC advice helps keep programs up-to-date and responsive to changing economic needs. In Ontario for example, new program proposals leading to an Ontario college credential must have specific industry feedback regarding the need for the proposed program in the community and approval of the proposed curriculum (The Exchange, 2017).

Approval and Funding Process

The proposed plan for the new program needs approval at different levels. Each college has identified individuals and groups that approve and review the program proposal. Ultimately, however, the final approval at the college level resides at the college's Board of Governors[21] (BOG).

[21] The governing body of the College, with responsibility for fiduciary oversight and institutional performance.

Programs that award credentials[22] (such as trade certificates, apprenticeship titles) need to be approved by the provincial authority responsible for credential validation. In Ontario for example, the Credential Validation Services (CVS) reviews the curriculum to ensure that the program title conforms to provincial guidelines and that the curriculum is consistent with the credential framework. Another example of such an institution is the Degree Quality Assessment Board in British Columbia (The Exchange, 2017).

Programs that are not self-funded by the college and require provincial government funding are to be approved by the respective provincial ministry. In Ontario for example, this task in undertaken by the Ministry of Training Colleges and Universities (MTCU) who reviews the program for funding purposes. Funding approval by the provincial government only occurs after the BOG has approved the program and the respective credential validation authority has validated the program (ibid.).

Table 8 includes specific information regarding the curriculum design phase in each province/ territory. Although the concept process is similar throughout the country, small variations exist. Table 8 aids in illustrating the variations in the provinces of Alberta, British Columbia, Ontario and Quebec. The remaining provinces are available in Table A14 in the Appendix. Each province has additionally been awarded a “high” “medium” or “low” ranking in terms of its Education Employment Linkage (EEL) with regards to the process of curriculum design. EEL is defined in VET as the balance of power between education and employment system actors. A “high” level of EEL represents a power equilibrium between education and employment actors, which makes VET graduates most successful on the labor market (Renold, et al., 2016).

Table 8: Province Specific Curriculum Design Details

Province/ Territory	Type of VPET Program	Curriculum Design
Alberta	College	According to the *Post-Secondary Learning Act* in Alberta, all publicly funded institutions must receive approval from the Minister responsible for advanced education to create, update, suspend or terminate diploma, certificate or degree programs (CICIC, 2017a). The approval system is designed to promote system development and coordination. It is a two stage process consisting of (1) system coordination review by the ministry

[22] Credential recognition is crucial for regulated occupations. Regulated occupations are occupations that set their own standards and that require workers to have a license to practice. About 20 percent of jobs in Canada are regulated occupations. These include regulated professions (e.g. nurses) and skilled trades (e.g. plumbers).
Within each province and territory, a regulatory body exists for each regulated occupation. Most regulatory bodies have their own Web sites that describe their licensing requirements including information on eligibility requirements, foreign credential recognition, and registration fees (Government of Canada, 2017b).

		and, if positive, (2) quality review by the Campus Alberta Quality Council (CAQC) (ibid.). In the case of private vocational training institutions, the minister must grant a license to the specific institution. Requirements include: proof of labor market demand for graduates, the curriculum is considered by industry to be relevant, the admission requirements for students are suitable, and instructor qualifications are viewed by industry as being appropriate (ibid.).
	Apprenticeship	Alberta's apprenticeship and industry training system relies on a network of industry committees that play a crucial role in curriculum design (ibid.): • Each trade has a provincial apprenticeship committee (PAC), these committees provide recommendations to the board on training requirements, certification requirements, and standards for trade. • In areas where there is enough activity, local apprenticeship committees (LACs) are established. LAC responsibilities include making recommendations about apprenticeship and certification to the PAC for their trade. Although the curriculum design system relies heavily on industry partners, ultimately the government designs the regulatory framework. For this reason, Alberta's EEL is at a medium level.
British Columbia	College	All college institutions in British Columbia except the Justice Institute of British Columbia[23] have an internal education council. It is composed of students, faculty, administrators and support staff. The education council is responsible for setting curriculum content for courses leading to certificates, diplomas, and degrees. It is also in charge of setting examination policies and approving both degree and non-degree programs supported by provincial funding (CICIC, 2017b). Once the education council has approved a degree, the new degree program proposals are presented to the Degree Quality Assessment Board for review. The Degree Quality Assessment Board reviews the proposals and makes a recommendation to the Minister. As with public universities, the Minister must approve all new degree program proposals (CICIC, 2017b).
	Apprenticeship	British Columbia's curriculum design process is heavily lead by the industry through the ITA, achieving a "high" level of EEL.
Ontario	Colleges	*No further information available.*
	Apprenticeship	The program standards for apprenticeship and trades in the province of Ontario are based on industry developed occupational standards. These standards define skill and

[23] Under the *College and Institute Act*, the Justice Institute of British Columbia is not required to have an educational council.

		knowledge requirements for a successful performance in a trade or occupation. The Programs Branch of the Ministry of Training, Colleges and Universities oversees the development and approval of training standards for apprenticeship programs (CICIC, 2017c). The director of apprenticeship has responsibility for approving in-school curriculum part of the apprenticeship trades developed by industry committees. These are provided by training delivery agents (TDAs), which are mostly, but not exclusively, Ontario colleges of applied arts and technology. The TDAs deliver the prescribed training in accordance with the direction of industry committees (CICIC, 2017c). Similar to British Columbia, Ontario also achieves a "high" ranking of EEL due to the Ontario College of Trades which drives the occupational standards as well as the regulatory process in curriculum design.
Quebec	Colleges	The *Ministère de l'Enseignement supérieur du Québec* is responsible for developing technical training based on three principles (CICIC, 2017d): • accessible training adapted to needs • harmonized programs between the secondary and college levels • sustained cooperation with community partners
	Apprenticeship	The *Direction de l'Apprentissage* manages the apprenticeship program qualifications, guides the introduction of new occupations within the qualification plan, devises and administers the qualification exams for apprenticeships in regulated occupations (CICIC, 2017d). Quebec is ranked "low" in EEL due to the dominant role the government has.

3.5.2 Curriculum Application Phase

Details of the application of curriculum for College and Apprenticeship post-secondary Education per province are available in Table 9 and in Table A15 the Appendix. In general, it is very common for students following apprenticeship training to spend 80 percent of their time on the job and 20 percent of their time in in-school based training. Apprenticeships last a total of two to four years (depending on the trade) and the in-school portion of the training lasts approximately eight weeks with slight variations per province. Curriculum details per province (type pf programs, degrees or institutions are also highlighted in Table 9 and in Table A15 in the appendix.

Table 9: Province Specific Curriculum Application Details

Province/ Territory	Type of Post-Secondary Program	Curriculum Application
Alberta	College	*No further information available*
	Apprenticeship	In Alberta, there are 49 designated trades. Apprenticeship programs in most of the trades take between three and four years to complete, with apprentices spending approximately 80 percent gaining on-the-job training and experience and 20 percent attending classes at a Polytechnical Institution or Comprehensive Community Institution. Eleven public postsecondary institutions (Polytechnical Institutions as well as Comprehensive Community Institutions) provide the majority of the technical training portion of the apprenticeship program, based on course outcomes. Alberta trains approximately 20 percent of the Canada's apprentices (CICIC, 2017a).
British Columbia	College	*No further information available*
	Apprenticeship	80 Percent on the job training and 20 percent in school training for a duration of 4 years (ITA, 2017).
Ontario	Colleges	In Ontario, the majority of college programs fall into two categories: diploma programs (two to three years in duration) and certificate programs (one year of full-time study or less). College programs include: traditional postsecondary programs, post-basic programs, college preparatory programs and adult-training programs funded by the provincial government. Additionally, custom-tailored courses designed to meet specific training needs of particular businesses and industries, are available in many fields on a contract basis (CICIC, 2017c).
	Apprenticeship	In Ontario, there are over 140 trades, divided into four respective sectors: construction, industrial, motive power, and service. Colleges provide the classroom-training portion of apprenticeship training that amounts from eight to twelve weeks representing 20 percent of the time of the total apprenticeship training (CICIC, 2017c).
Quebec	Colleges	*No further information available*
	Apprenticeship	There are 140 trades in Quebec. Similar to other provinces the on-the-job part of the training involves 80 percent of the time while 20 percent corresponds to in-school based training (Emploi Quebec, 2017c).

3.5.3 Curriculum Feedback Phase

Similar to the Curriculum Design and Curriculum Application (see 3.5.1 and 3.5.2) Table 10 below and Table A16 in the Appendix provide details regarding clarification on curriculum review/ feedback procedures implemented in each province.

In addition to the measures presented in Table 10 and Table A16, a large number of Canada's regulated professions have professional groups (associations or professional colleges) that carry out accreditation reviews of the post-secondary programs related to their professions. For more details and access to a complete list of associations, see section 3.3.2: Education Training and Providers.

Table 10: Province Specific Curriculum Feedback Details

Province/ Territory	Type of Post-Secondary Program	Curriculum Feedback
Alberta	College	All college institutions in Alberta have internal new program proposal review procedures together with processes to periodically review approved programs based on institutional policies and procedures, often using external reviewers. The Campus Alberta Quality Council (CAQC) also has a role in monitoring new approved degree programs (CICIC, 2017a). The Private Career Colleges branch of the ministry conducts compliance reviews of licensed private vocational training programs when non-compliance issues are identified. Additionally, each institution is required to forgo an external review carried about by an accounting firm selected by the ministry (CICIC, 2017a).
	Apprenticeship	The apprenticeship and industry training system in Alberta operates on a three-year business cycle. This cycle includes a program evaluation of the in-school portion of apprenticeship training by using performance indicators such as apprenticeship and graduate satisfaction surveys and graduate employment rates (CICIC, 2017a).
British Columbia	College	*No further information available*
	Apprenticeship	The Industry Training Authority is responsible for leading and overseeing the industry training and apprenticeship system in British Columbia. Key goals for the ITA include (CICIC, 2017b): • Individuals are recognized for their skills and knowledge and have opportunities to develop to their full potential • Employers and industry have the skilled workers they need to be successful • The industry training system makes a vital contribution to BC's prosperity
Ontario	Colleges	The ministry of Training, Colleges and Universities together with Ontario's 24 colleges of applied arts and technology launched the key performance indicator (KPI) project. The project provides students a clear picture of the ability of Ontario's postsecondary institutions to successfully prepare graduates for jobs. There are currently five KPI areas being examined: graduate employment, graduate satisfaction,

		employer satisfaction, student satisfaction and graduation (CICIC, 2017c). Additionally, colleges are responsible for regular reviews of their programs in accordance with internal college policies and procedures. Colleges must ensure that their programs meet the requirements of provincially published standards (CICIC, 2017c).
	Apprenticeship	The quality of the in-school portion of apprenticeship training is reviewed and monitored through the examination of student satisfaction surveys, graduate employment rates and success rates in the examination for the Certificate of Qualification (CICIC, 2017c). Actors such as The Ontario College Quality Assurance Service (OCQAS) provides mechanisms that ensure specific program quality and consistency standards are met by the colleges of applied arts and technology (CAAT) in Ontario (CICIC, 2017c).
Quebec	Colleges	Quality assessment for programs offered by colleges is provided by the *Commission d'évaluation de l'enseignement collégial*, which assesses the following aspects in each institution (CICIC, 2017d): • institutional policies on the evaluation of learning achievement and their implementation • institutional policies on the evaluation of programs of studies, and their implementation • the implementation of curricula set by the minister responsible for the *Ministère de l'Enseignement supérieur du Québec*, taking into account the objectives and standards assigned to them • the objectives, standards and implementation of the programs of studies established by the institution, taking into account the needs these programs are designed to meet Additionaly, for general and vocational colleges (*CEGEPS*) and subsidized private educational institutions, the Commission also evaluates the strategic plan of institutions as well as instruction and support services (CICIC, 2017d).
	Apprenticeship	*No further information available*

3.6 Supplying Personnel for the VPET System (Teacher Education)

Apprenticeship Training

As explained in section 2.3.1, the apprenticeship training is divided into on-the-job training and in-school training. For the on-the-job training, apprentices are trained by a journeyperson.

Journeypersons are individuals that have mastered all aspects of a given trade and have certification to train and a mentor apprentices. There are two ways to obtain journeyperson certification. Apprentices that successfully complete the apprenticeship training and pass the examination become journeypersons and are therefore able to train new apprentices. Journeyperson certification can also be obtained through the trade qualifier/ tradesperson route. Individuals that have been working in a certain trade for many years and do not want to go the apprenticeship route may present proof of work experience and challenge the examination. If the examination is successfully completed, they become journeypersons (OECD, 2015f; OECD, 2015e).

Based on the information presented in the following section (College Education), it is assumed that teachers that have completed technical vocational teacher education teach the in-school training of the apprenticeship program.

College Education

Individuals who have a broad knowledge in a technical field, interest in working with young people and good interpersonal skills can enrol in a technical vocational teacher education program in college. Graduates of this program later find employment in community colleges or high schools offering vocational training. In Manitoba for example, the Technical Vocational Teacher Education program from Red River College enables students to develop the knowledge and skills in order to obtain vocational teacher certification. In this, program candidates learn teaching methodology, the development and assessment of vocational courses, computer applications, and the design of facilities for delivery of vocational education programs. Additionally, students spend 18 weeks of the program in a teaching practicum. After three years part time or one year full time (90 credit hours) and successful graduation, students receive a Diploma in Vocational Teacher Education and are eligible for a Vocational Teaching certificate issued by the government. Additionally, graduates can continue and complete further 60 credit hours at the University of Winnipeg to obtain a Bachelor of Education with a major in vocational education (Red River College, 2017).

Admission requirements for a program include (in addition to a successful high school completion and proof of English language proficiency) submitting proof of training and work experience in the form of a journeyperson certificate with two years of approved trade experience from the documented date of receiving the diploma (Red River College, 2017). Other provinces also offer similar structured programs with the option of obtaining a certificate in technical vocational education (journeyperson certification is used as admission criteria and as sole area of teaching) or completing a full degree and choosing a second teaching area to compliment the student's technical background (University of Saskatchewan, 2017).

Teacher training in Quebec

In order to teach in an institution offering preschool, elementary or secondary education in the province of Quebec, teachers must have a teaching license issued by the *Ministère de l'Éducation, du Loisir et du Sport* (MELS). The license guarantees teaching qualification. A license to teach in the vocational education sector may be in the form of a teaching permit, a teaching authorization or a teaching diploma. Table 11 describes conditions and validity of each of the license types (MELS, n.d.).

Table 11: Types of Licenses to Practise the Profession of VET Teacher in Quebec

License type	Conditions	Validity
Teaching permit (for immigrants who have obtained a teaching licence abroad)	• hold a teaching licence issued outside Québec by the competent authority of the province, territory or State in which they received training in education or teaching • successful completion of a university program equivalent to at least 450 hours of training in educational psychology • have a diploma directly related to the vocational education program in which they wish to teach. This may be a Diploma of Vocational Studies (DVS); a Diploma of College Studies (DCS) in a technical program; a bachelor's or equivalent degree • accumulation of at least 3,000 hours of work experience in the practice or teaching of the trade they wish to teach	Valid for five years and may be renewed for five-year periods if the permit holder successfully completes a course on the Québec school system (3 credits).
Teaching authorisation	• have obtained a document attesting to the successful completion of 90 credits, including 42 credits in education, within a 120-credit vocational teacher training program offered at a Québec university • hold a diploma directly related to the vocational education program in which they wish to teach. This may be a Diploma of Vocational Studies (DVS), a Diploma of College Studies (DCS) in a technical program, a bachelor's or equivalent degree	The teaching authorization is valid for five years and may be renewed for five-year periods if, at the time of renewal, the holder fulfils one of the following requirements: • has taught 750 hours in a public or private institution in Québec, if the hours are directly related to the training for which the teaching authorization was issued

	• have accumulated at least 3,000 hours of work experience in the practice or teaching of the trade to be taught	• has accumulated 1,500 hours of relevant experience in the workplace • has earned 9 of the 30 additional credits in a bachelor's program in vocational teacher training at a Québec university • has partially met at least two of the three preceding requirements provided that the combined achievement percentages total at least 100%.
Teaching diploma	To **directly** obtain a teaching diploma, candidates must hold a diploma in an accredited initial teacher training program (sometimes referred to as preservice programs) from a Québec university and: • hold a diploma directly related to the vocational education program in which they wish to teach. This may be a Diploma of Vocational Studies (DVS), a Diploma of College Studies (DCS) in a technical program, a bachelor's or equivalent degree • have accumulated at least 3,000 hours of experience in the practice or teaching of the trade to be taught. To obtain a teaching diploma, holders of a teaching permit who were **trained abroad** must: • successfully complete a 600- or 900-hour probationary period to demonstrate their ability to teach in the Québec school system; • successfully complete the course on the Québec school system (3 credits). To obtain a teaching diploma, holders of a teaching authorization must complete the teacher training program at a Québec university where they are enrolled.	Permanent

Source: (MELS, n.d.)

In college and university institutions, no license is required since each post-secondary institution is free to hire its own teaching staff and evaluate them according to the institutions qualifications (MELS, n.d.).

4. Major Reforms in the Past and Challenges for the Future

4.1 Major reforms

The major reforms introduced in Canada with respect to the VET system have been carried out at a provincial level in the late 90s and early 00s. This sub-section will outline those that had or will have major impacts.

Past Reforms

In the province of Quebec, the late 80s and mid 90s played a significant role in the reformation of the vocational system to what we know today. In white paper published in 1986 titled "*La formation professionnelle à l'école secondaire, énoncé de politique et plan d'action relatif à l'enseignement professionnel au secondaire* the government stated its objectives of providing schools the right tools needed to train a high quality workforce able to respond to the needs of business. In January 1995, a task force named *Groupe de travail sur la relance de la formation professionnelle des jeunes au secondaire et de la formation technique* was set up to analyse the organizational framework for vocational education at the secondary level, to provide an evaluation and recommend ways to stimulate greater business involvement. Additionally, a plan of increasing the social status of vocational and technical education also drafted. In October 1996, the education ministry introduced a plan of action for the reform of the education system titled *A New Direction for Success: Ministerial Plan of Action for the Reform of the Education System.* Most of the recommendations made by the task force in 1995 were taken into consideration for the reform. One major objective of the ministerial plan of action for the reform of the education system (A New Direction for Success) in the area of vocational education was to offer students a choice between several training paths. This was achieved by taking action to increase the number of young people enrolled in vocational education and provide earlier access to vocational education programs. By implementing the Program for the Diversification of Career Options in Vocational Education (Youth Sector), three new training opportunities were opened up: a pathway leading to the a job in a semi-skilled trade, programs leading to a Diploma of Vocational Studies and integrated secondary-college level programs (see 3.1 for a detailed explanation of each pathway). The majority of these measures were introduced as an experimental program and retained in the basic vocational training regulation that has been in force since July 1, 2000 (Government du Québec, 2002).

In British Columbia, during the beginning of the 2000s the apprenticeship system was reformed to focus on a competency-based approach returning much of the administration from government to industry. The new apprenticeship system developed began in August 2003 with the development of the Industry Training Authority and proposed four major reforms. The first

reform replaced the former assessment of certification (requiring minimum training periods) to a purely competency-based system. Additionally, certification was broken down into independent component modules that could be achieved through not only the traditional apprenticeship system but also other post-secondary education programs. The third reform introduced as a result of the development of the new apprenticeship program resulted in a transfer of responsibility for the apprenticeship from to industry. This included responsibilities such as the design of academic curricula, the responsibility for promotion and some responsibility for funding. The fourth introduced reform resulted in the replacement of the old Industry Training and Apprenticeship Commission (ITAC) by the Industry Training Authority (ITA) (Centre for the Study of Living Standards, 2005).

In the province of Ontario, the year 2000 marked the introduction of the Apprenticeship and Certification Act, in an effort to reform the apprenticeship system's institutional framework. The focus of the legislation was to de-regulate substantial aspects of apprenticeship agreements, such that they could be regulated by industry committees. Similar to the reforms carried about in British Columbia, which have been described above, regulation of the apprentice-journeyperson agreement was devolved with the industry. Unlike the BC system however, the new legislation guaranteed the composition of industry committees, which divides representation equally between employer and employee representatives additionally, certification was awarded only for the full completion of an apprenticeship program, as contrast to the modularization of apprenticeship programs described in the reformed BC model (Centre for the Study of Living Standards, 2005).

Alberta initiated its reforms earlier than British Columbia or Ontario through the 1996 discussion paper "A vision for the Future". In 2000, the Alberta Apprenticeship and Training Act was amended to fit these new changes. Similar to the reforms carried out in Ontario the new model shifted the regulatory responsibility from the Act itself to 74 a network of industry committees. The Alberta apprenticeship system was explicitly founded on a network of industry committees which advise the Apprenticeship and Industry Training Board (AITB). The major difference with regards to the Ontario model however was that the Act continued to regulate apprenticeship wages and journeyperson ratios (Centre for the Study of Living Standards, 2005).

Current / Recent Reforms

In 2015, the Government of Ontario created The Premier's Highly Skilled Workforce Expert Panel and asked them to develop "an integrated strategy to help the province's current and future workforce adapt to the demands of a technology-driven knowledge economy – with a goal of doing so by bridging the worlds of skills development, education and training"

(Government of Ontario, 2017).The outcome was a report titled *Building the Workforce of Tomorrow: A Shared Responsibility.* This report provides a set of 28 recommendations in six key themes and two other areas (Role of federal Government and Measuring Success). The area of experimental learning and mentoring proposes reforms to the apprenticeship system and an inclusion of more vocational elements into education. For example, the expansion of Ontario's Specialist High Skills Majors Program to 25 percent of all students in grades 11 and 12 in the next three years to expose more high school students to opportunities in the workforce. Additionally, it also recommends to streamline the process of matching students to employers and the development of a modernized apprenticeship system reflective of the current business climate and focused on integration of more young people into skilled trades (Government of Ontario, 2017; The Premier's Highly Skilled Workforce Expert Panel, 2016).

As a result of this report, the Ontario Ministry of Advanced Education and Skills Development (MAESD) is considering reforming how the apprenticeship system functions. Two half-day consultation sessions about reforming the apprenticeship system have been held on June 15, and July 25th, 2017. As of the writing of the section, the process is still ongoing.

4.2 Major challenges

The following section includes a brief mention of the major challenges for the Canadian VPET system, outlined in the OECD report *A Skills Beyond School* (OECD, 2015e):

- Apprenticeship dropout is a challenge particularly in good economic times or in booming sectors where apprentices may drop out because they can get good wages with the skills they have already learned. Additionally, Canada's resource richness in terms of the dynamic natural resource sector is a contributing factor to the dropout rate. According to the OECD, in 2010 the rate was around 50 percent levels.

- Apprenticeship graduates have few routes to higher professional trade qualifications. Upon receiving the journeyperson certification, graduates may seek entry to college or university programs. However, the option of higher professional examination within a specific trade (available in other European Countries) is not generally available. This could be a contributing factor lowering the status of apprenticeship programs. It should be highlighted however that preliminary progress is already being made in this area programs such as the Blue Seal program in Alberta.

- The range of apprenticeships available is relatively limited, with a large majority of occupations related to trades and construction. When comparing the Canadian apprenticeship system to other countries' it becomes obvious that the Canadian system covers fewer trades. Provincial governments have sought to extend the apprenticeships to other areas but have found it difficult to do so, particularly in white collar jobs.

- The Red Seal examination is currently a written multiple-choice test for most trades. Although this examination compliments the provincially determined examination for apprentices it still contrasts with that offered in other countries. Although a practical component of examination is more resource intensive than a written test, it provides a further spectrum for competence assessment.

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Appendix

Figure A9: The KOF Youth Labour Market Index (YLMI) Spider Web Breakdown

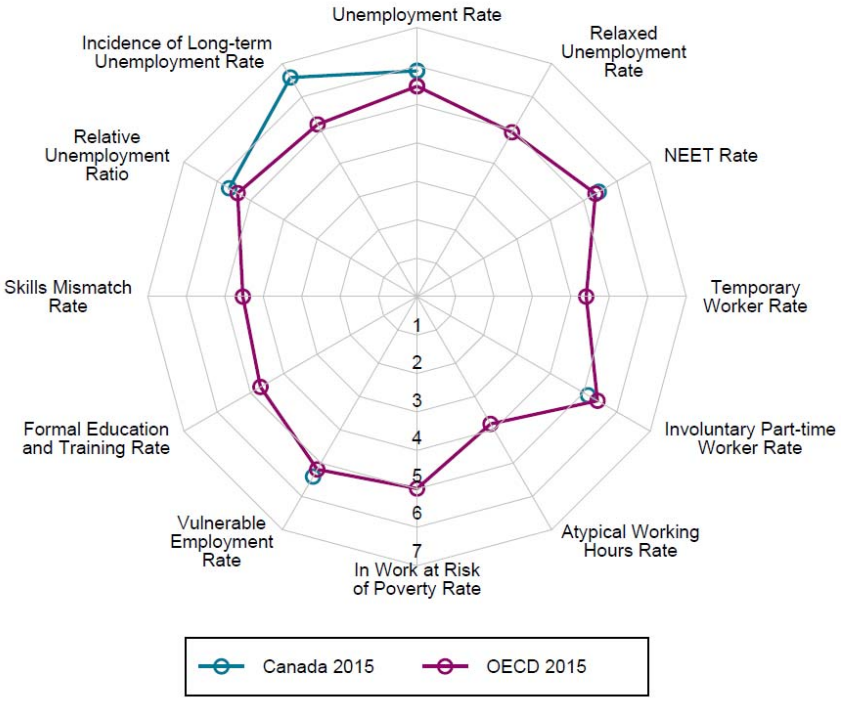

Table A12: Red Seal Trades

Agricultural Equipment Technician	Appliance Service Technician	Automotive Painter
Automotive Service Technician	Baker	Boilermaker
Bricklayer	Cabinetmaker	Carpenter
Concrete Finisher	Construction Craft Worker	Construction Electrician
Cook	Drywall Finisher and Plasterer	Electric Motor System Technician
Floorcovering Installer	Gasfitter – Class A	Gasfitter – Class B
Glazier	Hairstylist	Heavy Duty Equipment Technician
Heavy Equipment Operator (Dozer)	Heavy Equipment Operator (Excavator)	Heavy Equipment Operator (Tractor-Loader-Backhoe)
Industrial Electrician	Industrial Mechanic (Millwright)	Instrumentation and Control Technician
Insulator (Heat and Frost)	Ironworker (Generalist)	Ironworker (Reinforcing)
Ironworker (Structural / Ornamental)	Landscape Horticulturist	Lather (Interior Systems Mechanic)
Machinist	Metal Fabricator (Fitter)	Mobile Crane Operator
Mobile Crane Operator (Hydraulic)	Motor Vehicle Body Repairer (Metal and Paint)	Motorcycle Mechanic
Oil Heat System Technician	Painter and Decorator	Partsperson

Plumber	Powerline Technician	Recreation Vehicle Service Technician
Refrigeration and Air Conditioning Mechanic	Rig Technician	Roofer
Sheet Metal Worker	Sprinkler System Installer	Steamfitter / Pipefitter
Tilesetter	Tool and Die Maker	Tower Crane Operator
Transport Trailer Technician	Truck and Transport Mechanic	Welder

Source: Adapted from (OECD, 2015e).

Table A13: Relevant VPET Legislation

Province/ Territory	Relevant VPET Legislation	Also See
Alberta	Post-Secondary Learning Act Programs of Study Regulation Private Vocational Training Act Private Vocational Training Regulation Apprenticeship and Industry Training Act	https://www.cicic.ca/1153/Quality-assurance-practices-for-postsecondary-institutions-in-Alberta/index.canada
British Columbia	College and Institute Act, R.S.B.C. 1996, Chapter 52 Degree Authorization Act, S.B.C. 2002, Chapter 24 Industry Training Authority Act, S.B.C. 2003, Chapter 34 Private Training Act, S.B.C. 2015, c. 5, s. 63 Private Training Regulation 153/2016, M.O. 219/2016 University Act, R.S.B.C. 1996, Chapter 468	https://www.cicic.ca/1156/Quality-assurance-practices-for-postsecondary-institutions-in-British-Columbia/index.canada
Ontario		https://www.cicic.ca/1178/Quality-assurance-practices-for-

	Postsecondary Education Choice and Excellence Act, 2000 S.O. Chapter 36 Post-Secondary Education Choice and Excellence Act, 2000 - Ontario Regulation 279/02 Ontario Colleges of Applied Arts and Technology Act, 2002 Ontario Colleges of Applied Arts and Technology Act, 2002 - Ontario Regulation 34/03 Private Career Colleges Act, 2005 Private Career Colleges Act, 2005 - Ontario Regulation 414/06 Private Career Colleges Act, 2005 - ONTARIO REGULATION 415/06 Ontario College of Trades and Apprenticeship Act, 2009, S.O. 2009, c. 22 University Foundations Act, S.O. 1992, Chapter 22 Ontario Labour Mobility Act, 2009, S.O. 2009, c. 24 Fair Access to Regulated Professions and Compulsory Trades Act, 2006, S.O. 2006, c. 31	postsecondary-institutions-in-Ontario/index.canada
Quebec	General and Vocational Colleges Act C-29 College Education Regulations C-29, r. 4 Regulation respecting the definition of resident in Québec E-9.1, r. 2 Educational Institutions (College or University Level) Regulation A-3.01, r. 1 Regulation respecting the bylaws or policies that a general and vocational college must adopt	https://www.cicic.ca/1173/Quality-assurance-practices-for-postsecondary-institutions-in-Quebec/index.canada
Manitoba	The Advanced Education Administration Act, A6.3 The Apprenticeship and Certification Act, A110 The Colleges Act, 150.1	https://www.cicic.ca/1201/Quality-assurance-practices-for-postsecondary-institutions-in-Manitoba/index.canada

	The Degree Granting Act, D25 The Manitoba Institute of Trades and Technology Act, T130 The Private Vocational Institutions Act, P137 The Private Vocational Institutions Regulation, R.237/2002 The Red River College Act, R31 The University College of the North Act, U55	
New Brunswick	Adult Education and Training Act (R.S.N.B. 2011, c. 101) Apprenticeship and Occupational Certification Act (S.N.B. 2012, c. 19) Degree Granting Act (R.S.N.B. 2011, c. 140) New Brunswick Community Colleges Act (S.N.B. 2010, c. N-4.05) Private Occupational Training Act (R.S.N.B. 1973, c. P-16.1) Maritime Provinces Higher Education Commission Act (R.S.N.B. 2011, c. 187) General Regulation (O.C. 84-679) - Private Occupational Training Act	https://www.cicic.ca/1197/Quality-assurance-practices-for-postsecondary-institutions-in-New-Brunswick/index.canada
Newfoundland and Labrador	Apprenticeship and Certification Act, Chapter A-12.1 College Act, 1996, Chapter C-22.1 Degree Granting Act, Chapter D-5 Private Training Institutions Act, Chapter P-25 Private Training Institutions Regulations 1114/96	https://www.cicic.ca/1193/Quality-assurance-practices-for-postsecondary-institutions-in-Newfoundland-and-Labrador/index.canada
Nova Scotia	Apprenticeship and Trades Qualifications Act, 2003, amended 2006, c. 23; 2014, c. 3, ss. 2-15; 2014, c. 41 Apprenticeship and Trades Qualifications Act Regulations Nova Scotia Apprenticeship Agency Operating Charter	https://www.cicic.ca/1186/Quality-assurance-practices-for-postsecondary-institutions-in-Nova-Scotia/index.canada

	Community Colleges Act, 1995-96, amended 2002, c. 31, s. 13; 2010, c. 2, ss. 93-95; 2014, c. 3, ss. 16-26 Degree Granting Act. R.S., c. 123, s. 1., amended 2006, c. 26 Degree Granting Act, Degree-Granting Institution Authorizing Regulations, N.S. Reg. 388/2008 Maritime Provinces Higher Education Commission Act. 2004, c. 30, s. 1. An Act Respecting Private Career Colleges. 2015, c. 25, s. 2. Private Career Colleges General Regulations, N.S. Reg. 56/2016 Private Career Colleges Operational Regulations, N.S. Reg. 96/2016 Adult Learning Act, 2010, c. 31, s. 1.	
Northwest Territories	Apprenticeship, Trade, and Occupations Certification Act, S.N.W.T. 2010,c.13 Apprenticeship and trade certification regulations, R-056-2012 Occupation certification regulations, R-057-2012 Private Vocational Training Designation Directive Aurora College Act R.S.N.W.T. 1988, c. A-7	https://www.cicic.ca/1189/Quality-assurance-practices-for-postsecondary-institutions-in-the-Northwest-Territories/index.canada
Nunavut	Nunavut Arctic College Act R.S.N.W.T. 1988, c.A-7 Nunavut Arctic College Regulations R-119-94 Universities and Degree-Granting Institutions Act, S.Nu. 2008,c.15 Schedule Apprenticeship, Trade and Occupations Certification Act, R.S.N.W.T. 1988, c.A-4 Apprenticeship, Trade and Occupations Certification Regulations R.R.N.W.T. 1990, c.A-8 Occupational Training Agreements Act, R.S.N.W.T. 1988,c.16(Supp.): This consolidation is ongoing (September 19,	https://www.cicic.ca/1182/Quality-assurance-practices-for-postsecondary-institutions-in-Nunavut/index.canada

	2014). See subsequent amendments: S.Nu. 2011,c.10,s.24.	
Prince Edward Island	University Act, R.S.P.E.I 1988, Cap. U-4 Private Training Schools Act, R.S.P.E.I. 1988, Cap. P-20.1 Private Training Schools Act, Regulations Maritime Provinces Higher Education Commission Act, R.S.P.E.I. 1988, Cap. M-2 Apprenticeship and Trades Qualification Act, R.S.P.E.I. 1988, Cap. A-15.2 Apprenticeship and Trades Qualification Act, General regulations	https://www.cicic.ca/1169/Quality-assurance-practices-for-postsecondary-institutions-in-Prince-Edward-Island/index.canada
Saskatchewan	The Private Vocational Schools Regulation Act, 1995 The Private Vocational Schools Regulations, 2014 The Apprenticeship and Trade Certification Act, 1999 The Regional Colleges Act, Chapter R-8.1 An Act respecting the Authority to Provide Degree Programs and to Grant Post-secondary Degrees and making consequential amendments to other Acts, Chapter D-2.1 The Degree Authorization Regulations, D-2.1 Reg 1	https://www.cicic.ca/1164/Quality-assurance-practices-for-postsecondary-institutions-in-Saskatchewan/index.canada

Table A14: Province Specific Details for Curriculum Design Cont.

Province/ Territory	Type of VPET Program	Curriculum Design
Manitoba	College	*No further information available*
	Apprenticeship	The Apprenticeship and Certification Board and the Minister of Jobs and the Economy are the co-authorities for training and certification in the designated skilled trades training in Manitoba. The Board is appointed to and accountable to the minister. It is in charge of developing objectives, standards,

		and requirements for apprenticeship and certification in designated trades and (with final approval of the minister) makes regulations respecting trades and apprenticeship (CICIC, 2017e). The Apprenticeship and Certification Board creates trade-specific Provincial Advisory Committees (PACs) to provide advice on regulation content and training standards in each designated trade. College instructors may provide input into the development of program standards at the request of the PAC. Based on PAC recommendations, the Apprenticeship and Certification Board approves curriculum content and certification standards for each trade or occupation (CICIC, 2017e). Apprenticeship Manitoba is the institution responsible for the provision of overall policy and regulatory coordination for the skilled trades in addition to delivering certification examinations and for issuing Certificates of Qualifications (CICIC, 2017e). EEL in Manitoba also achieves a “medium” ranking since final approval is still heavily influenced by the government.
New Brunswick	College	The crown Corporations of New Brunswick Community College (NBCC) and Collège Communautaire du Nouveau-Brunswick (CCNB) develop new program proposals and conduct internal reviews of existing programs. Similar to other provinces, program advisory committees (PACs) with external representation from industry are employed in this process. Proposals on the need for new programs and significant program changes are reviewed by the NBCC management team, according to guidelines approved by the Minister. Those programs identified for analysis are subsequently reviewed to determine if necessary resources are available to deliver the program, following which a decision is made and financial support is determined (CICIC, 2017f).
	Apprenticeship	The Apprenticeship and Occupational Certification Board is responsible for developing the curriculum of the in-class portion of apprenticeship training and for providing it to training deliverers. NBCC is currently the main provider of in-school apprenticeship training (CICIC, 2017f). In new Brunswick EEL is ranked “high” since 50 percent of the Apprenticeship and Occupational Certification Board is composed by employers.
Newfoundland and Labrador	College	The Board of Governors of the each respective college is responsible for the following areas (CICIC, 2017g): • establishing courses of study • standards of admission • qualifications for diplomas • organizing examinations and examiners • creating academic boards and committees • recruiting all employees with the exception of the president, who is appointed by the provincial government.
	Apprenticeship	The Provincial Apprenticeship and Certification Board has a broad set of responsibilities impacting the curriculum design phase for apprenticeship programs (CICIC, 2017g):

		• setting of policies to ensure that the *Apprenticeship and Certification Training Act* is implemented; • accreditation of institutions to deliver apprenticeship programs • designation of occupations for apprenticeship training and/or certification • establishment of Provincial Advisory Committees for each designated occupation • establishment of examination committees to conduct practical examinations for apprentices and trade qualifiers • approval of Plans of Training • provision of advice to government on labor market matters related to training and certification Newfoundland and Labrador is ranked on the lower tier of the "medium" category in EEL due to only having 3 employer representatives on its Provincial Apprenticeship and Certification Board.
Nova Scotia	Colleges	The governing board of the (Nova Scotia Community College) NSCC is responsible for the following areas relevant for curriculum development (CICIC, 2017h): • establishment of programs of study, • providing for the granting of community college certificates and diplomas (the college does not grant degrees)
	Apprenticeship	The Nova Scotia Apprenticeship Agency is responsible for the development, implementation and review of occupational standards, curriculum standards, logbooks and examinations in designated trades. Additionally, the agency actively consults stakeholders (such as industry, advisory committees, subject matter experts and training providers) to ensure they are engaged throughout the development cycle (CICIC, 2017h). Nova Scotia is ranked "high" in EEL due to a high employer ratio in its The Nova Scotia Apprenticeship Agency.
Northwest Territories	College	*No further information available*
	Apprenticeship	In the Northwest Territories, the Department of Education, Culture and Employment (ECE) is the public authority responsible for apprenticeship matters. The ECE is in charge of qualifications for apprenticeship, providing examinations, establishing standards for examinations, and providing for inspection of training. ECE can additionally establish the contents of and standards for the in-school portion of apprenticeship training, known as the trade instruction courses and examinations. This includes approve the location of trade instruction courses, the major pieces of equipment used in the instruction, the instructional materials, and the curriculum (CICIC, 2017i). EEL in Norwest territories is "low" due to the central role the government has in the decision-making process.
Nunavut	College	Degree programs delivered in Nunavut are currently offered through partnerships with educational institutions in other Canadian provinces/ territories (CICIC, 2017j).

	Apprenticeship	Under the Apprenticeship, Trade and Occupations Certifications Act, the government has extensive authority to regulate apprenticeships. These regulations address qualifications for apprenticeship, establish standards for examinations, and provide for inspection of training. The Supervisor of Apprenticeship, Trade and Occupations Certification has the authority to establish the contents of and standards for the in-school portion of apprenticeship training. These responsibilities include the location of trade instruction courses, the major pieces of equipment used in the instruction, the instructional materials, and the curriculum (CICIC, 2017j). EEL in Nunavut is "low" due to the central role the government has in the decision-making process.
Prince Edward Island	College	The board of governors of Holland college is responsible for various tasks in the curriculum development process (CICIC, 2017k): • establishing courses of study • standards of admission • qualifications for diplomas • organizing examinations and examiners • creating academic boards and committees • recruiting all employees including the president College program and curriculum development staff together with external representatives work on the development of new programs internally from industry (CICIC, 2017k).
	Apprenticeship	Provincial legislation requires each trade to have a trade advisory committee (TAC) as a subcommittee of the Provincial Apprenticeship Board. The TACs are responsible for recommending the standards for training and certification, identifying the training needs and content for their trade, and reviewing the educational curriculum (CICIC, 2017k). The Provincial Apprenticeship Board has the responsibility, in consultation with the Department of Workforce and Advanced Learning, to approve plans of training in each designated trade. Trade advisory committees (TACs) are established to develop specific plans of training. These are provided to Holland College (the sole deliverer of the in-school technical instruction in apprenticeship in the province) for curriculum development. The college develops the curriculum for in-school instruction based on national occupational standards established for each trade. The TAC reviews the curriculum, making the necessary changes and reports to the Provincial Apprenticeship Board. The board instructs the college to make the identified changes and deliver the training. Department of Workforce and Advanced Learning staff members work on an ongoing basis together with college apprenticeship staff in order to address any potential issues that may arise (CICIC, 2017k). In Prince Edward Island EEL is ranked "medium" since one third of the board is composed of employer representatives.
Saskatchewan	College	New certificate and diploma programs are developed internally by college and curriculum development staff. Input from program committees composed of external

		representatives from industry plays an important role too (CICIC, 2017l).
	Apprenticeship	The Saskatchewan Apprenticeship and Trade Commission is the responsible institution for establishing industry occupational standards, for apprenticeship curriculum and examination development, and for training purchases for in-school delivery through obtaining input from industry representatives (workers, employers) and commission staff on trade boards. The commission's curriculum and examination development boards and trade examining boards update and approve curriculum and revise examinations (CICIC, 2017l). EEL in Saskatchewan is ranked in the lower tier of the "medium" category since employers are still present on the Saskatchewan Apprenticeship and Trade Commission. However, their share of power is lower than 30 percent.
Yukon	College	In the province of Yukon, the Yukon College serves a vast, sparsely populated region of the Canadian North. The college relies heavily on community input to ensure that community service and graduate employment needs are met. For this reason, new programs and significantly changed programs are processed using procedures in which course and program content are developed with input from presidents' committees on programs. These committees are composed of sectorial representatives from outside the college and provide advice on the feasibility of new program proposals as well as content considerations (CICIC, 2017m).
	Apprenticeship	The Apprentice Training Act grants the government the authority to make regulations relating to many aspects of apprenticeship such as the qualifications necessary to become an apprentice; the duration, nature, and scope of the training; appointment of examining boards; examinations and standards for examinations; the issuing certificates; and monitoring of the training of apprentices. The Regulation sets the Department of Education as responsible for the delivery of apprentice training and tradesperson qualification in Yukon (CICIC, 2017m). The Department of Education, through the Advanced Education Branch, stipulates the delivery agents for apprentice in-school training and in most cases, administers the in-school examinations of students in apprenticeship training (CICIC, 2017m). EEL in Yukon is ranked "low" due to the central role the government has in the decision-making process.

Table A15: Curriculum Application Details per Province

Province/ Territory	**Type of Post-Secondary Program**	**Curriculum Application**
Manitoba	College	*No further information available*

	Apprenticeship	In Manitoba, approximately 80 percent of apprenticeship training occurs on the job. The other 20 percent is technical training, taken once per year in a block of time away from the workplace. Apprenticeship Manitoba arranges for the delivery of the in school aspect of the apprenticeship training (CICIC, 2017e).
New Brunswick	College	NBCC and CCNB diploma programs typically require 80 weeks of instruction; or a minimum of 45 credits; certificates typically require 32 - 40 weeks, or a minimum of 10 or more credits. Students who take part in programs of less than 10 credits or 15 weeks may obtain a certificate of achievement if their work is evaluated. For short programs where there is no evaluation, students can obtain a certificate of participation (CICIC, 2017f).
	Apprenticeship	In Manitoba, 80 percent of apprenticeship training is done on-the-job under the mentorship of a certified journeyperson. The remaining 20 percent is attained during “block release” which is completed at a post-secondary institution. NBCC and CCNB they are contracted by the Department of Post-Secondary Education, Training and Labour to deliver “block release training” for approximately six weeks per year (CICIC, 2017f). There are 54 trades in New Brunswick resulting in provincial certification. Additionally, eighteen trades where there is no apprenticeship training exist; in this case, a certificate of qualification is offered upon successful demonstration of the required number of hours in the trade (CICIC, 2017f).
Newfoundland and Labrador	College	The College of the North Atlantic is the province's only public college, enrolling 9,116 students in 2014-15. This institution is the largest non-university postsecondary educational and skills-training institutions in Atlantic Canada. It operates 17 campuses across the province as well as a campus in Qatar (CICIC, 2017g).
	Apprenticeship	Apprenticeship training is offered through union schools, PTIs, and the College of the North Atlantic. 80 percent of an apprentice’s skills are acquired at the workplace, while 20 percent are acquired at a training institution (CICIC, 2017g).
Nova Scotia	Colleges	In Nova Scotia, the Nova Scotia Community College is the only college providing post-secondary VPET education. It is located on 13 campuses and a number of learning centers and offers certificate, diploma, and post-diploma programs serving key sectors in the economy: applied arts and new media, business, health and human services, trades and technology, and access. Taking apprenticeship courses, safety training, and regular college programs through the Internet is also a possibility (CICIC, 2017h).
	Apprenticeship	In Nova Scotia, there are 69 designated trades. Apprenticeship training has a combination of 85 percent on the job training and 15 percent technical training (CICIC, 2017h). The Nova Scotia Community College (NSCC) is the primary deliverer of apprenticeship technical training. It provides both traditional classroom and on-line options for apprentices. Technical training is also provided by the United Association

		Local 56, Plumbers and Pipefitters; the International Association of Heat and Frost Insulators and Allied Workers Local 116; and the Nova Scotia Boatbuilders Association (CICIC, 2017h).
Northwest Territories	College	The majority of postsecondary education in the Northwest Territories is delivered through Aurora College, a publicly funded college headquartered at Fort Smith. Programs vary in length from eight weeks (apprenticeship programs) to four years, but generally, certificate and university transfer programs involve one year of full-time studies, and most diploma programs, two years (CICIC, 2017i).
	Apprenticeship	There are 53 designated trades in the Northwest Territories. Apprenticeship training is delivered through Aurora College in blocks of 8 weeks. The length of time it takes to complete an apprenticeship depends on the trade, but it is usually four years, with time split between working (80 percent) and technical training at school (20 percent) (CICIC, 2017i).
Nunavut	College	Postsecondary education in Nunavut is delivered mainly through the Nunavut Arctic College (NAC). NAC offers certificate, diploma, trades, and university transfer programs in areas such as teacher education, health careers, career development, and community administration (CICIC, 2017j). Programs vary in length from eight weeks to four years, but generally speaking certificate and university transfer programs involve one year of full-time studies and two years are required for diploma programs (CICIC, 2017j).
	Apprenticeship	Nunavut Arctic College, Northern Alberta Institute of Technology (NAIT), Southern Alberta Institute of Technology (SAIT) and Aurora College in the Northwest Territories deliver most of the in-school educational class instruction in apprenticeship programs. These vary in length between two to four years and include from eight to twelve weeks of block training (CICIC, 2017j).
Prince Edward Island	College	*No further information available*
	Apprenticeship	In Prince Edward Island, Holland College is the sole deliverer of the in-school technical instruction in apprenticeship in the province. The split between on the job and school training is 80 / 20 respectively (CICIC, 2017k).
Saskatchewan	College	Sask Polytech offers a broad range of career-oriented certificate and diploma programs. Diploma programs require two years of full-time study, while certificate programs are usually completed in one year. Some of Sask Polytech's programs include a mandatory cooperative education component, where students spend 16 to 19 months in academic study and an additional 11 to 12 months engaged in paid work experience (CICIC, 2017l). The Saskatchewan Indian Institute of Technologies (SIIT) offers certificate and diploma programs. Certificate programs usually require 24 weeks to one year of full-time study. Diploma programs generally require two or three years of full-time study.

		The institute also offers various adult basic education and literacy programs (CICIC, 2017l).
	Apprenticeship	There are 47 designated trades in Saskatchewan. Apprenticeship training varies by trade but is typically delivered over four years, including up to eight weeks of technical training sessions each year and on-the-job training provided by employers (CICIC, 2017l). Sask Polytech delivers the majority of the technical training for apprentices; however, in certain of the trades, apprenticeship technical training is provided by other institutions such as the Saskatchewan Indian Institute of Technologies, regional colleges, private vocational schools, SaskPower, the Saskatchewan Tourism Education Council, or out-of-province colleges (CICIC, 2017l).
Yukon	College	Yukon College programs are organized into the following eight schools: the School of Management, Tourism and Hospitality, School of Trades, Technology and Mining, School of Liberal Arts, School of Academic and Skill Development, School of Science, School of Community Education and Development, School of Continuing Education and Training, and the School of Health, Education and Human Services. Through these schools, Yukon College offers one-year certificate programs and two-year diploma programs (CICIC, 2017m).
	Apprenticeship	There are 48 trades/occupations in which apprenticeship and certification are available in Yukon. About 80 per cent of training takes place on the job. In-class training ranges from 4 to 12 weeks per year. It can take two to four years to finish your on-the-job and classroom training (CICIC, 2017m).

Table A16: Province Specific Curriculum Feedback Details

Province/ Territory	**Type of Post-Secondary Program**	**Curriculum Feedback**
Manitoba	College	College programs in Manitoba are reviewed in a number of ways: internal reviews the institutions caries out, external reviews as well as the government's curriculum approval process. Each new program is assessed through an internal program approval process at the specific college. It is the College's board responsibility to ensure the quality of their college programs by regularly reviewing them. Other post-secondary institutions (such as industry experts, the regulator or accreditation body in the field) usually conduct external reviews of a newly proposed program (CICIC, 2017e).
	Apprenticeship	Apprenticeship Manitoba is the institution is responsible for ensuring the quality of course content. Training provider also plays a role in ensuring the quality of its services (CICIC, 2017e).

		Every three to five years, a review of program content takes place. Apprentice success on the final certification examination is reviewed on an ongoing basis (CICIC, 2017e).
New Brunswick	College	*No further information available.*
	Apprenticeship	Student surveys, on-site visits, and success rates of technical training examinations and final examinations are used quality of program delivery (CICIC, 2017f).
Newfoundland and Labrador	College	Educational programs of the College of the North Atlantic are reviewed internally by college program staff on a regular basis for updating and to ensure relevance to the demands of the marketplace. External review organizations to which the college is formally accountable for program quality do not exist (CICIC, 2017g).
	Apprenticeship	The Atlantic Apprenticeship Council (AAC) was established to share common concerns and economical opportunities for cooperation among apprenticeship programs in the four Atlantic Provinces (Newfoundland and Labrador, New Brunswick, Nova Scotia, and Prince Edward Island) (CICIC, 2017g).
Nova Scotia	Colleges	In order to comply with the *Community Colleges Act*, college program staff regularly evaluate current community college programs internally in order to ensure relevance to the demands of the marketplace. Additionally, all new community college programs are also subject to review and approval by the Nova Scotia Department of Labor and Advanced Education, whose staff examine proposals from a content perspective as well as in relation to institutional capacity and market demand. If the internal review of existing programs recommend changes in length, credential, name or program scope, the Nova Scotia Department of Labor and Advanced Education reviews and approves those recommendations (CICIC, 2017h).
	Apprenticeship	The Nova Scotia Apprenticeship Agency Program Development staff are responsible for the development, implementation and review of occupational standards, curriculum standards, logbooks and examinations in designated trades. Staff consult extensively with apprenticeship stakeholders – including industry, advisory committees, subject matter experts and training providers – to ensure they are engaged throughout the development cycle (CICIC, 2017h).
Northwest Territories	College	Aurora College (the only public community college in the NWT) has policies and procedures for the evaluation of programs and services that are approved by the Board of Governors. For example, degree, diploma, and certificate programs are internally reviewed following a schedule approved by the Board of Governors. Programs may also undergo external review by external partners and ECE (CICIC, 2017i).
	Apprenticeship	Reviews are carried about through employer satisfaction surveys and board reports. The Northwest Territories Apprenticeship Review Board, made up of industry representatives, and government, conducts accreditation

		reviews for all the trades training at Aurora College (CICIC, 2017i).
Nunavut	College	The framework for review of college programs in Nunavut follows standard evaluation practices common in the Canadian college environment and includes consultation with a broad range of stakeholders to ensure credibility and usefulness (CICIC, 2017j). Outside of government of Nunavut, there are no review to which the college is formally accountable to ensure program quality. As a measure of control however, the President of the Board of Governors for Nunavut Arctic College must report to the Minister for approval of new programs and significant changes to existing programs (CICIC, 2017j).
	Apprenticeship	Quality of apprenticeship programming is monitored through mechanisms such as operational reviews, board reports, and graduate and employer satisfaction surveys (CICIC, 2017j).
Prince Edward Island	College	In Prince Edward Island, existing programs are reviewed in accordance with internal policies. Additionally, quality is also assessed through annual graduate surveys, full-time student surveys at the end of every course, and new student surveys six weeks following enrolment. The Board of Governors prepares reports that include demonstrated response action and follow-up (CICIC, 2017k). Holland College is holds an ISO 9001:2008 certification. Through this process, every program and student service area is audited once a year, including a review of student progress and program delivery (CICIC, 2017k).
	Apprenticeship	The Department of Workforce and Advanced Learning reviews apprenticeship training programs for quality and relevance on a cyclical basis (once every two years , with a goal of once every two years for each program (CICIC, 2017k).
Saskatchewan	College	*No further information available.*
	Apprenticeship	*No further information available.*
Yukon	College	Yukon College's campus committees ensure that college programming remains relevant to community needs. All new and significantly changed courses and programs are approved by the college's academic council to ensure that the appropriate rigor and standards are met. Additionally, the Department of Education also provides input into the review of some college programs (CICIC, 2017m).
	Apprenticeship	Quality is monitored through internal reviews of completion examination results and external reviews of curriculum by trade committees to ensure relevance to the needs of industry. Course and instructor evaluations conducted by students and outcomes surveys administered by the delivery agents are used, in occasions, to evaluate the in-school delivery portion (CICIC, 2017m).