The Path Less Travelled:
Improving Vocational Education in BC

by

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Abstract

Schools are the primary government institution that prepares youth for adulthood in BC. Whether youth move on to postsecondary education or employment after secondary school, it is expected that the school system prepare youth for the next stage of their lives. This study finds that a significant population of British Columbian youth struggle to find steady employment or complete a postsecondary education program after leaving secondary school. The secondary school system poorly prepares students for non-academic postsecondary education and employment.

This study describes BC's population that struggles to transition from secondary school into education or employment, and explores the social and educational factors that lead to strong employment outcomes in adulthood. The secondary school-based vocational educational system and youth employment outcomes of British Columbia are compared with those of Australia, Germany, and Switzerland. Four policy options are considered to expand connections between secondary schools, employers, and postsecondary institutions. It is recommended that British Columbia expand its current suite of vocational education programs through a grant to school districts, and that it expands the occupational fields with training certified by the Industry Training Authority. These options are determined to best connect youth to existing support structures and expand the types of occupational training youth may participate in while in secondary school.

Keywords: education policy; vocational education; work-based learning; public policy

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List of Acronyms

ASQA	Australian Skills Quality Authority
ITA	Industry Training Authority
NEET	Not in Employment, Education, or Training
OECD	Organization for Economic Co-operation and Development

Glossary

Credential	Government-issued certification recognizing learning
Dual System	secondary school learning that combines classroom learning with workplace learning in equal measure
Dogwood Diploma	The educational credential issued to youth upon graduation from secondary school in BC
Family Effect	The effect of children in the household on labour force participation by gender
Floundering	Employment in short-term, low-wage jobs, often marked by periods of unemployment and labour market withdrawal and entry into short-cycle postsecondary education programs
Intergenerational Income Mobility	the extent to which an individual's income is related to the income of the household within which they were raised (Corak, 2017, p. 2)
NEET Rate	The share of the population not in actively in education, employment, or occupational training
Pathway	the route that a student follows through their education before entering the workforce. School systems create pathways that push students to fulfill specific requirements and complete credentials that will dictate where they are able to move next
School-to-Work Transition	a youth's transition from secondary education into the labour market
Vocational Education	education that provides the student with skills and competencies directly related to an occupation
Youth	people between the ages of 15 and 25

Executive Summary

Many young British Columbians struggle to adjust to the labour market and further education after leaving secondary school. Many youth in BC move between low-paying, low-skill, jobs that are unlikely to lead to long-term stability. This population often starts, but rarely finishes, postsecondary programs. This early experience of the labour market shapes their working lives: youth who struggle in academia or the labour market in their 20s are less likely than their peers to participate in the labour market and higher education throughout their adult lives. This study argues that BC's secondary school system plays a crucial role in these youths' transition into adulthood, and that BC's secondary schools can adopt policies that would reduce the number of youth struggling to transition into their careers.

This study describes how youth in BC transition from secondary school into further education or work. A mixed-methods research approach is applied to investigate student transitions and compare jurisdictional outcomes. Data is drawn from the government of BC, Statistics Canada, and the Organization for Economic Co-operation and Development (OECD). Interviews with key stakeholders provide in-depth knowledge about secondary school programming. And, academic literature on the precursors of individual success in the labour market identifies the factors lead to important student transitions.

I compare youth outcomes in employment and education, and find several countries that have consistently achieved stronger outcomes for youth than in Canada. I conduct case studies of the secondary school systems of Australia, Germany, and Switzerland. The case studies identify two key gaps in BC's secondary schools: low levels of enrollment in vocational education programming, and few vocational certification options for secondary school students.

Based on the differences between secondary education in these countries and BC, policy options are evaluated for the improvement of BC's secondary schools. This study considers providing school districts with a financial incentive to increase Career Program enrollment or introducing a Vocational Dogwood diploma. And, to make credentials easier to access for secondary school students, I examine expanding the existing apprenticeship system, or introducing basic vocational education courses.

This study concludes that the existing policy frameworks for BC's vocational education are sound, but require support from government to effectively address poor student transitions. I recommend BC include Career Program enrollment in the calculation of school districts' operating grants, and that the province encourage apprenticeship training in more occupational fields.

Chapter 1.

Introduction and Policy Problem

The education system is the primary institution through which youth interact with the government. From the ages of 5 – 18, most young British Columbians are enrolled in state-operated public schools, and receive a Dogwood Diploma as a certificate of their graduation upon completion of their 12th year (Ministry of Education, 2016, p. 1). In the 2017/18 school year, 40,000 students graduated from BC's schools (Ministry of Education, n.d.-b).

After graduation, students are expected to begin working or enter postsecondary. Most new graduates enter provincial postsecondary institutions, while most others enter the labour market (Heslop, 2019, p. 11). However, many change their choices in subsequent years: most students who enter postsecondary education drop out of their program, and many of those who start working immediately after secondary school work in a succession of low-skill jobs with little opportunity for career advancement. The worst-off among these young people find themselves with no options, and detach from the labour market and further education entirely. Vuolo, Staff, and Mortimor characterized these as "floundering" youth:

> Because early labour market experience is often characterized by trial-and-error "floundering" between unrelated types of work, many young people make the distinction between "real jobs"… and the shorter-term "survival" jobs they hold to support themselves as they attend school, pursue other objectives, or simply struggle to make ends meet while seeking more attractive options. (2013, p. 145)

Too many youth are floundering in BC. Students feel unprepared for their future: 61% of secondary school students feel they are unprepared for postsecondary, and 73% of students feel that secondary school has not prepared them for work (Ministry of Education, n.d.-e). As explored in Chapter 3, a large share of these students are unprepared, and flounder after completing secondary school.

This study proposes that improving vocational education programming in BC will improve transitions for floundering youth. The OECD has found vocational education and

training as important elements in workforce development (Alvarez-Galvan, et. al., 2014). In this capstone, I examine BC secondary school's vocational education, and propose, evaluate, and recommend policies that would improve youth engagement in BC's labour market.

1.1. Motivation

Youth disengagement from the labour force or post-secondary education has negative consequences. These are not only experienced by the disengaged individual, but impact society. The Conservative writer Oren Cass has argued that consistent work carries value beyond a pay cheque: it provides the worker with a stability of activity and dignifying self-sufficiency (2018, p. 53). Employment earnings discourage antisocial activities that risk stable working arrangements (ibid., pp. 53-54). On the other side of the ideological spectrum, Dr. William Julius Wilson identified joblessness as a key precipitator of social breakdown African American ghettos in Chicago:

> Although high-jobless neighbourhoods also feature concentrated poverty, high rates of poverty are less likely to trigger problems of social organization if the residents are working…. Today, the nonworking poor predominate in the highly segregated and impoverished neighbourhoods. The rise of new poverty neighborhoods represents a movement… toward a jobless ghetto, which features a severe lack of basic opportunities and resources, and inadequate social controls. (1996, p. 23)

Substance abuse, crime, and family breakdown were driven by a combination of idleness and poverty. Against these root causes, increased employment was, Wilson argued, the best foundation upon which improvements could be made in social conditions (1996, p. 238). Autor et al. quantitatively tested Wilson's conclusions across the entire American economy (2018, pp. 162-163). They found that Wilson's observations of youth in urban ghettos apply in all communities in which low-skill employment declines:

> Our analysis confirms William Julius Wilson's hypothesis that contracting blue-collar employment catalyzes changes in marriage, fertility, household structures, and children's living circumstances. Contractions in the supply of economically secure young adult men… spur a surge in male idleness and premature mortality, a decline in marriage and fertility, an increase in the fraction of mothers who are unmarried and who are heads of single, non-cohabiting households, and a growth in the fraction of children raised in poverty. (2018, p. 177)

In a survey of 16-year-old school leavers in the UK, those who experienced a period of NEET in their first year after school were at least three times more likely than other school-leavers to be NEET at age 21 (Brynner and Parsons, 2002, p. 301). The authors also found that NEET status was a strong indicator of a lack of employability throughout adulthood (Ibid., 302). The negative impacts of early unemployment or labour market inactivity have similar long-term impacts on young Canadians' rates of employment in adulthood. Campolieti, Fang, & Gunderson found that Canadian youth who do not work in the months after postsecondary graduation are less likely to find work throughout adulthood (2010, p. 48). Therefore, the NEET rate is particularly important among the young adult cohort: NEET status in young adulthood is a strong predictor of NEET status later in adulthood. Communities where a large share of the adult population is unemployed become communities characterized by social dysfunction, as demonstrated by Wilson and Autor above.

This study recommends that the government focus on ensuring that the school system prepares all youth for employment in their early 20s. In contrast to employment programs that target unemployed adults, changes to the secondary school system can mitigate the prevalence of adult unemployment or labour market inactivity. Also, in contrast to adult employment programs, youth in secondary school are already enrolled in government programming (the school system); many employment programs rely voluntarily on enrollment from the already unemployed. Changing secondary school programming provides youth with skills that prepare them for the labour market over their entire careers, mitigating the negative impacts of unemployment before they occur in an institution where youth are already receiving state support.

1.2. Why Vocational Education?

All youth must transition from their classrooms to adulthood, and secondary schools play a large role in determining how (Beeston, 2019). Though BC has a school system that provides students with strong academic competencies, many young British Columbians struggle to complete postsecondary education or begin a career by their mid-20s. Based on the findings of Chapters 3-5, improved vocational education programming presents an opportunity for BC's secondary schools to connect youth to the workplace before secondary school completion. Not all students enjoy school: many are "counting down the days until they are free of the classroom" (Parkin, 2019). BC

must recognize that these youth are unlikely to enroll in an academic postsecondary program, and instead guide them towards vocational education alternatives.

Furthermore, youth with poor school-to-work transitions are disproportionately likely to live in communities that are already poorly connected to postsecondary and the labour market (Chapters 3 and 4). As demonstrated in other countries, vocational education in secondary schools can link youth to the labour market (Chapter 5), leading to improved employment outcomes. The goal of this capstone is to explore the areas in secondary schools where students connect to postsecondary education and employment opportunities prior to completing a Dogwood diploma.

Chapter 2.

Methodology

This study considers a simple research question: how can BC improve secondary school students' transitions into the labour market and postsecondary education?

I used a mixed-methods approach to gather and analyze data on student transitions, vocational education in BC, and practices in other jurisdictions. I interviewed experts and gathered publicly available data from the government of BC, Statistics Canada, and the Organization of Economic Co-operation and Development (OECD).

The age 20-24 cohort NEET rate is the primary statistic used to measure the "floundering" youth population in this study. The NEET rate is the percentage of the population who are neither employed, nor enrolled in education or training (Brunet, 2019, p. 5). This statistic captures nuance beyond the unemployment rate by distinguishing between the proportion of youth who have withdrawn from the labour force to pursue education, and those who have left the labour force for other reasons. The NEET rate is published by the OECD and Statistics Canada.

The NEET rate among the aged 15-19 cohort is excluded from this study, as most of the cohort is in secondary school. The rate among 25-29 year-olds is also excluded, due to the time the cohort spent out of secondary school and the "family effect" on women's labour market engagement (Chapter 3) (Brunet, 2018, pp. 7-8).

In time series and international comparisons, the Canadian NEET rate, calculated by Statistics Canada, is used as a proxy for the British Columbian NEET rate. There is a discrepancy between the reported NEET rates from Statistics Canada and the OECD, making direct comparison between data from these two sources difficult (Appendix A). Data from these sources is used in Chapters 3 and 5 to describe student transitions in BC, BC's education programs, and to compare the vocational education systems of the case studies.

The input of interviewees is incorporated throughout this study. Their contributions were invaluable to the analysis of BC's vocational education programming. The following individuals were interviewed:

- Karen Blake, Former Career Programs Coordinator, Vancouver School Board
- Jason Leber, Manager of Youth Programs, Industry Training Authority
- Derek Beeston, District Principal, Nanaimo-Ladysmith Public Schools Career Technical Centre
- Andrew Parkin, Executive Director, Environics Institute
- Staff Member, Ministry of Education

Chapters 3-5 of this study presents findings on youth floundering. Chapter 3 identifies the floundering youth population in BC through analysis of the province's NEET population and youth postsecondary educational achievement. Chapter 4 is a literature review of the determinants of successful school-to-work transitions. Chapter 5 contains case studies of youth outcomes and vocational programming in secondary schools. The profiled cases are BC, Australia, Germany, and Switzerland

The case studies were conducted to identify policy options that may be used in secondary schools in BC. Where Chapter 5 identifies differences in secondary school systems that may be addressed through changes to the secondary school system, Chapter 6 introduces policy options to implement changes in BC. The policy options are evaluated in Chapter 8, using criteria introduced in Chapter 7. Final recommendations are made in Chapter 9, and Chapter 10 is the conclusion of the study.

Chapter 3.

Youth Floundering

This chapter draws from literature produced in Canada, the United States, and Western Europe to identify the behaviors that indicate youth are floundering. Statistics from BC and Canada estimate how many BC youth are floundering and what that population looks like. Estimates of the floundering population are imprecise, which is reflective of the diverse experiences of young adults. There is overlap between the categories of not-in-the-labour-force, unemployment, informal work, formal employment, and education. However, understanding what share of the youth population floundering is crucial to determine whether the scale of policy changes necessary.

There is no dominant pathway from secondary school into a career. Paths between secondary education and the labour market are less standardized than in previous decades (Jacob & Weiss, 2010, p. 530). In the late 1990s, only 33% of American secondary school graduates moved directly from secondary school into postsecondary and then a career, 4 percentage points worse than 20 years earlier (Quintini & Manfredi, 2009, p. 34, fig.16).

As transitions from school into work have become less standardized, there are more points at which youth enter unemployment. Unemployment and employment in short-term “survival jobs”, to earn short-term income while applying for other work or saving for postsecondary, has become increasingly common (Mortimer, Staff, & Vuolo, 2013, p. 145). These jobs, while preferable to unemployment, do not provide long-term stability of income or employment.

Young adults who are less attached to the labour market are likely to take up many different jobs. In 2009, only 23% of 16-29 year-old Canadians experienced some unemployment, but only 5% of that cohort was unemployed for the entire year (LaRochelle-Côté, 2013, p. 12). A sizeable minority of youth are precariously tied to the labour force, and experience periods of unemployment, short-term employment, and enrolment in education throughout their 20s.

One indicator of delayed post-secondary preparation for employment is the average age of entry into Canadian apprenticeship programs: age 27 in 2016 (Gunderson & Krashinsky, 2016, p. 407). Most apprentices worked several different jobs and entered other, unrelated, education programs in the years between high school and entering their apprenticeship (ibid.).

Another indicator of floundering is the prevalence of informal work among young Canadians. The Bank of Canada reported that 42% of Canadian adults under 25 had relied on “informal arrangements” as their main source of income for some period between 2016 and 2018 (Kostyshyna & Luu, 2019, p. 4). This was 17 percentage points higher than the rate among 26-65 year-old Canadians (ibid.).

3.1. Student Transitions in BC

The conclusions of this section are based on the Student Transitions Project, a longitudinal study which tracked BC students from their entry into secondary school to entry into adulthood. The Project used BC student’s personal education numbers to track student progress through the education system and labour market (Student Transitions Project Secretariat, 2019). The research results of the Project encompass the graduating classes from the 2001/02 to the 2016/17 school years, and public post-secondary registrants from 2002/03 to 2018/19 (Heslop, 2019, p. 5). For those in the youngest cohort of the Project, their progress has been monitored from their mid-teens until their late 20s (ibid.).

3.1.1. Secondary School Completion

BC’s secondary schools have improved at getting youth to complete their Dogwood Diploma. From 2000 to 2017, the first-time secondary school graduation rate improved by four percentage points (Figure 1). The share of students who graduate within 6 years of entering grade 8 rose by the same amount: 80% to 84% (Ministry of Education, n.d.-b). Differences in the graduation rate between the genders and the Indigenous and non-Indigenous populations improved (Figure 2). These results indicate that the first marker of educational achievement, on-time secondary school graduation, has become achievable for most students.

Despite improvement, Indigenous students are still much less likely to secondary school as non-Indigenous students. Rates of Dogwood Diploma non-completion among Indigenous students remain 20 percentage points above other students (Figure 2). In 2017/18, Indigenous youth were 20% of all grade 12 non-graduates, despite only being 10% of the grade 12 population (Ministry of Education, 2020a).

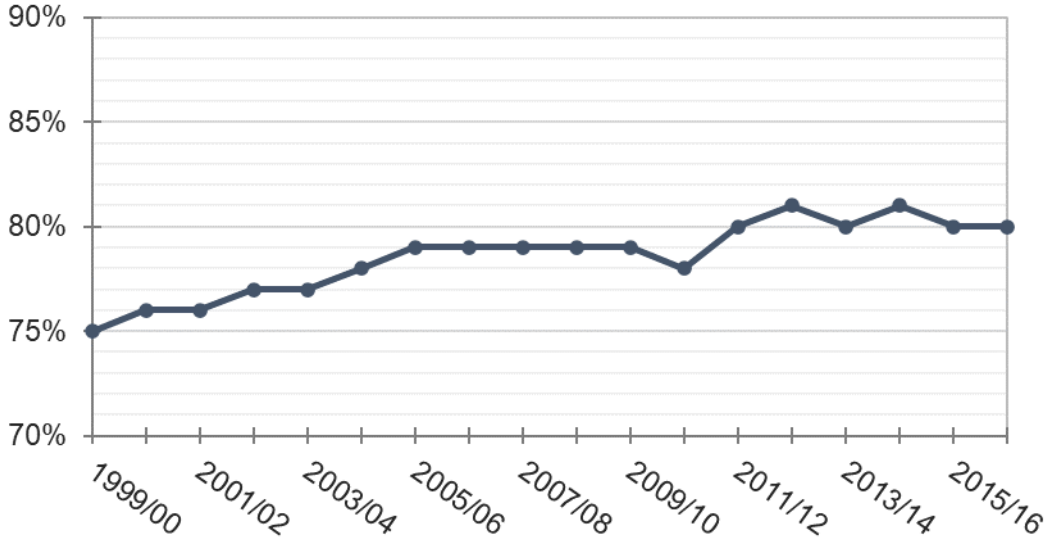

Figure 1: First-time Secondary School Graduation Rate in BC, 2999/00 – 2016/17

Source: Ministry of Education, 2020a. The rate presented is of those who are in grade 12 for the first time in September and graduate within the same school year.

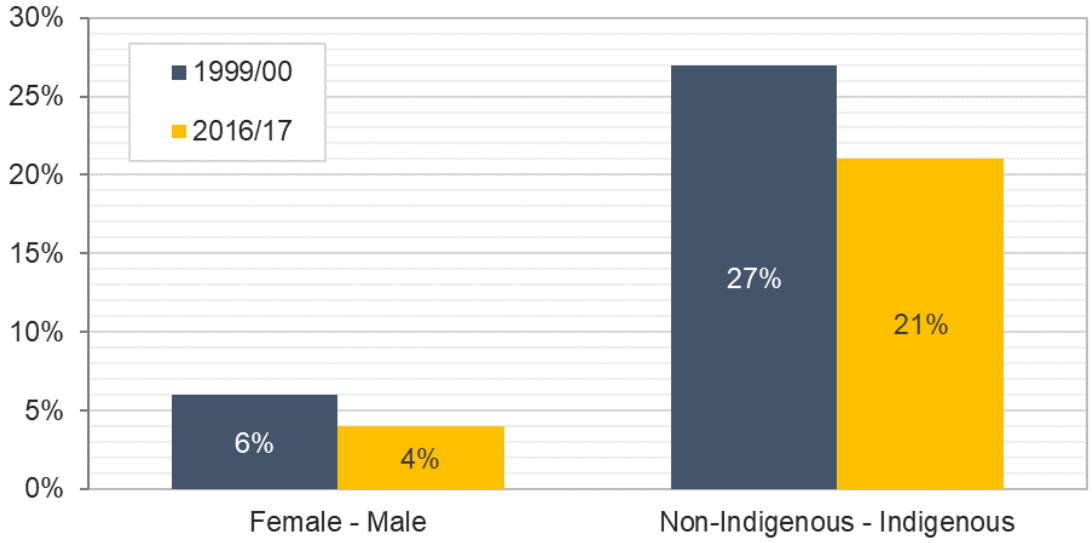

Figure 2: Percentage-point disparity in First-time Secondary School Graduation Rates by demographic group in BC, 1999/00 and 2010/11

Source: Ministry of Education, 2020a. The rate presented is of those who are in grade 12 for the first time in September and graduate within the same school year.

3.1.2. Postsecondary Enrollment and Achievement

Secondary school completion quickly leads to postsecondary enrollment for most Dogwood graduates. 53% of youth surveyed in the Student Transitions Project entered post-secondary education within one year of high school graduation (Heslop, 2019, p. 11). In the ten years following graduation, over three-quarters of Dogwood graduates had enrolled in some postsecondary education (ibid.).

Immediate postsecondary enrollment varies among different groups of Dogwood graduates. Those with high grades in secondary were most likely to enroll in postsecondary: over 60% of youth with high grades entered postsecondary studies in the year after Dogwood completion (ibid., p. 12). In contrast, less than 40% of Indigenous graduates and students with lower grades entered postsecondary within a year of completing their Dogwood diploma (ibid.).

When a student enters postsecondary is an important predictor of what type of program they are likely to enroll in. The differences between youth who enroll in postsecondary education immediately after completing secondary school and those who delay entry into postsecondary are illustrated in Figure 3. Students who enroll in postsecondary in the year following Dogwood completion are likely to be drawn from higher-achieving demographic groups: those with a 75% or higher grade average, non-Indigenous students, and those from the Fraser Valley were all more likely than their peers to enroll in postsecondary immediately after secondary school completion. Youth who enroll immediately in postsecondary education tend to enroll in BC's research-intensive universities at higher rates than those who delay entering postsecondary (Figure 3). Delayed-entry students are far more likely to enroll in program's in BC's teaching universities, colleges, and institutes (Figure 3). These students were often employed prior to entering postsecondary, and enter institutions that offer more occupation-specific programming than BC's research universities.

There are differences in postsecondary program choice between immediate- and delayed-entry students. Youth who are high achievers in secondary school are likely to quickly transition into an academic post-secondary program at Research Universities. Other youth are more likely to spend time in the labour market before enrolling in postsecondary, and determine which postsecondary program will suit their career goals

before enrolling. These youth are more likely than their academic peers to delay entry into the labour market and enroll at an institution that offers work-based programming: BC's Colleges, Institutes, and Teaching Universities (Figure 3).

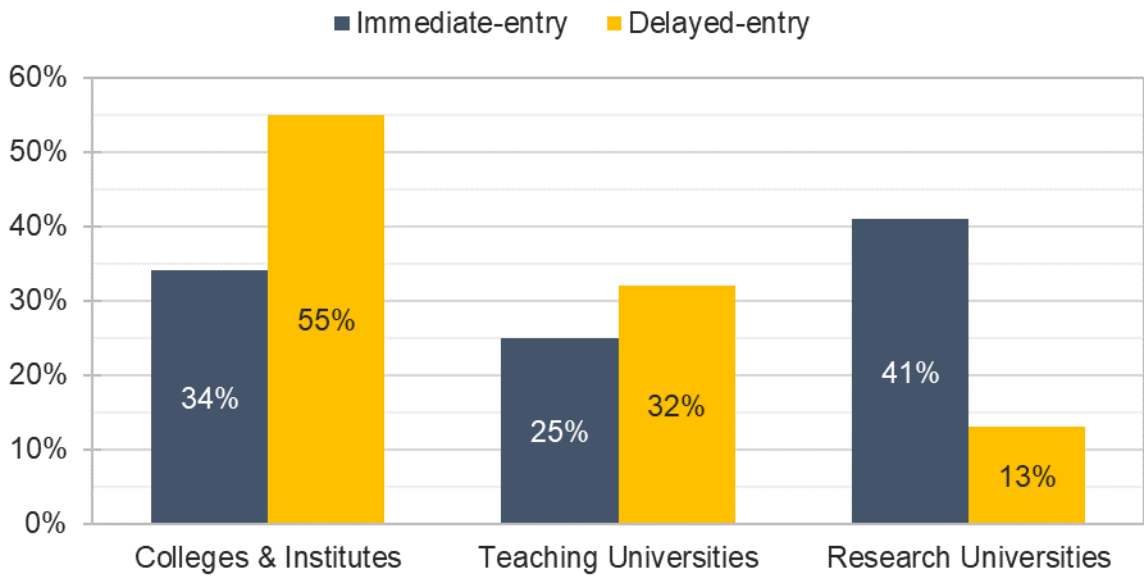

Figure 3: Share of BC Postsecondary student enrollment in Postsecondary Institutions, by time from Secondary School Graduation
Source: Heslop, 2019, p. 14, fig. 4

However, many youth do not stay in the pathway they begin in the first years after completing secondary school. Among the Student Transitions Project's early cohorts, only 42% of students who enrolled in postsecondary finished a credential within five years (Heslop, 2010, p. 1). All postsecondary programs had over half of students fail to complete the program they entered within 5 years (Figure 4). Certificate programs (short-term occupation-specific programs) were the exception: more youth completed a Certificate than chose it as their first program of enrollment (Figure 4).

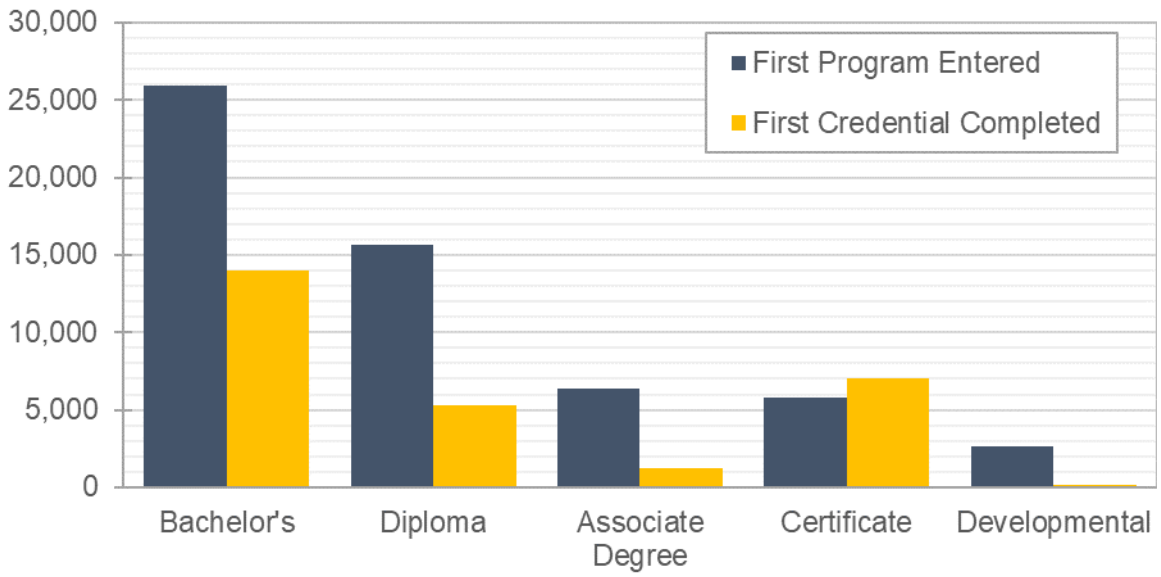

Figure 4: First Postsecondary Program Entered and First Credential Completed within 5 years of Dogwood Completion in BC, by Program Type, 2001/02 – 2003/04 Dogwood Graduation Cohorts

Source: Heslop, 2010, p. 2. Data is limited to students who entered post-secondary within one year after graduating from secondary. Developmental postsecondary programs have been removed.

The movement of students between first-time postsecondary enrolment in Bachelor's and Diploma programs to Certificate programs may identify a subset of the postsecondary population who do not wish to complete long-term educational credentials. Unlike postsecondary Degrees or Diplomas, which usually require at least 2 years of study, certificate programs only take between 6 and 12 months to complete, and focus on a small set of vocational skills (Education Planner BC, 2020). Certificate programs may therefore be appealing to youth who are looking to enter the labour market quickly rather than complete the years-long process of other postsecondary programming.

The Project's findings on postsecondary drop-out should not understate the importance of Bachelor's programs in BC. Bachelor's remain the most popular postsecondary option in BC: a plurality of enrollment and a majority of completed credentials are in Bachelor's programs (Figure 4). And, as discussed in Chapter 4, a Bachelor's Degree provides a strong route into the labour market.

However, movement out of Bachelor's programs and between other credentials identifies a large group of youth who take time to determine which postsecondary

program is appropriate for them. Among the cohort profiled in the Project, there were over 10,000 students who enrolled in, but did not complete, a Bachelor's program (Figure 4). These youth often enroll, and complete, short-cycle education only after determining what their future career may look like after spending time in the labour market.

3.2. The NEET Population in BC

From September 2018 to April 2019, the NEET rate among 20-24 year-olds in BC was 10%, slightly below the Canadian average (12%) (Brunet, 2019, p. 10). While this is a minority of the provincial population, BC's 2018/19 NEET rate identifies over 32,000 youth who were detached from the labour market through that academic year (Brunet, 2019, p.10; Statistics Canada, 2019a). The NEET rate does not identify why people leave the labour force. This section considers subpopulations of the NEET population, to better identify the subpopulations of youth who struggle to transition into the labour market.

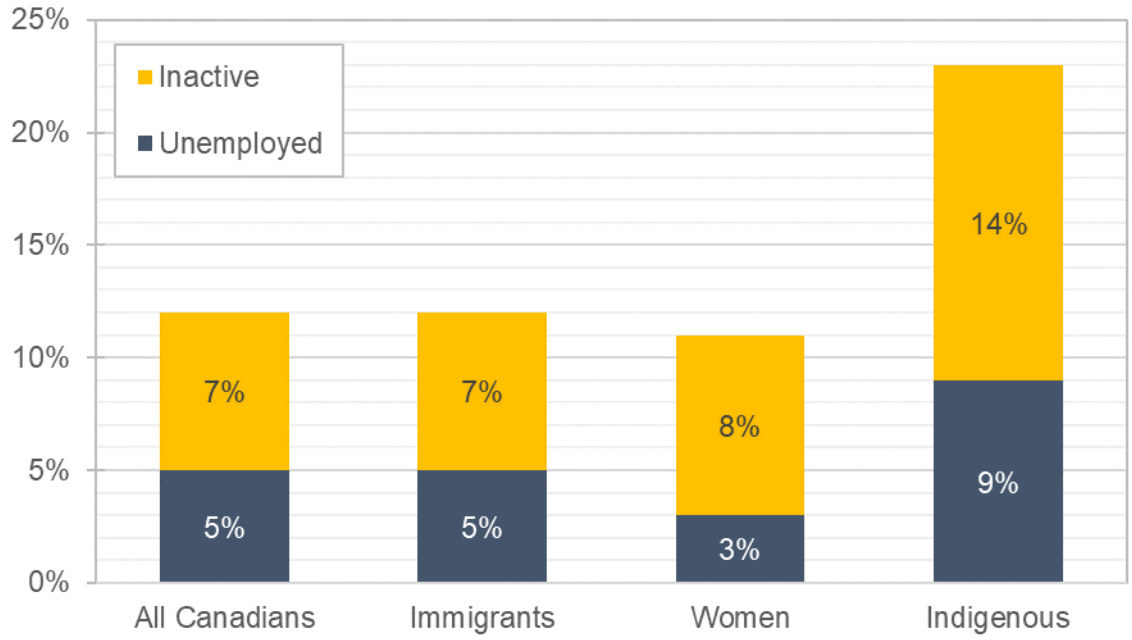

Figure 5: NEET Rates among 20-24 Year-old Canadians, by Demographic Group, 2018/19
Source: Brunet, 2019, pp. 23, Annex a2

Figure 5 presents the Canadian NEET rate across some commonly focused on different demographic groups in Canada to identify those most at-risk of labour force detachment. It presents clear results. For example, though there may be an expectation that immigrants experience greater difficulties in the labour force than the native-born population, Canadian immigrant youth have a NEET rate identical to the general population's (Figure 5). Canadian immigrants enter educational institutions at higher rates than the general population, and tend to settle in urban areas, both of which are indicators of low NEET rates in Canada (Brunet, 2019, pp. 23, Annex a2). Another potential reason for immigrant's equal NEET rates is Canada's economically focused immigration policy, which ensures that immigrants (or their parents) are connected to employment or education.

The NEET rate by gender indicates that women are slightly more likely to have a smooth transition into the labour market than men. As with the immigrant population, this may be due to higher levels of postsecondary enrollment among women, which keeps them out of the NEET statistics (Brunet, 2019, pp. 23, Annex a2).

However, it is worth noting that Canadian women have a higher labour market dropout rate than the population average (Figure 5). This may be explained by the "family effect": women are likely to leave the labour force after having children, while men are likely to join it, leading to higher rates of inactivity among mothers, and unemployment among men who would otherwise be labour market inactive or enrolled in education (Marshall, 2012, p. 10). In 2016, 36% of women with children aged 20-24 had left the labour force or further education (Figure 6).

This data does not provide the detail to determine whether women who leave the labour force are choosing to do so because they lack other opportunities. The "family effect" identifies a group within the NEET population, caregiving mothers, whose detachment from the labour market may be due to a purposeful withdrawal from the labour market, rather than a failed school-to-work transition. For these mothers, improved secondary school programming may not change their likelihood of being engaged in the labour market.

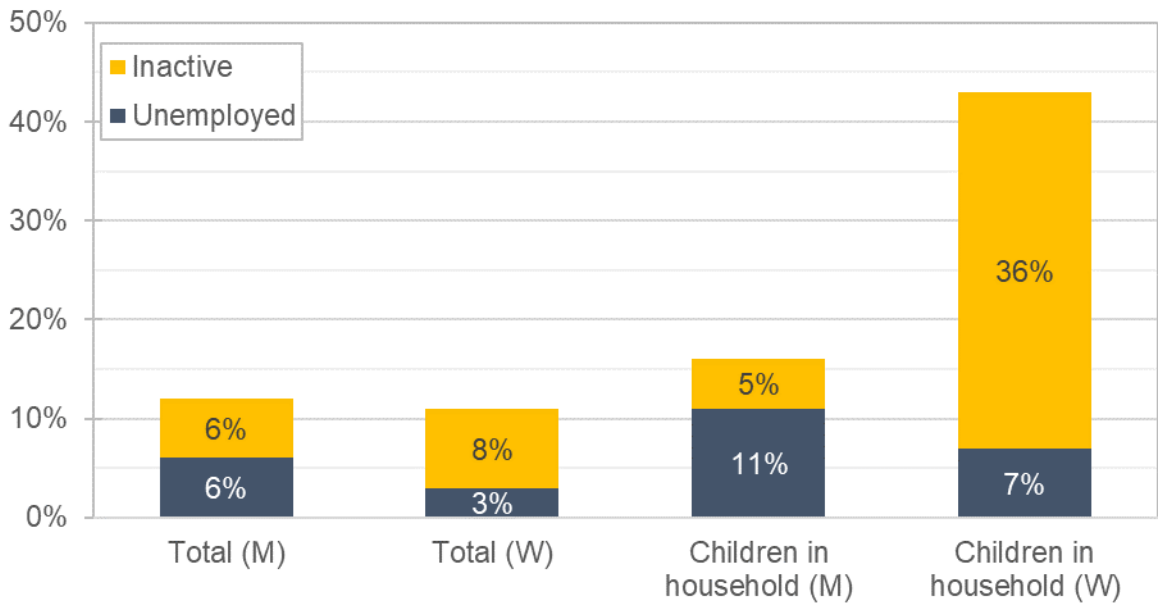

Figure 6: NEET Rates Among 20-24 year-old Canadians, by Gender and Children's Presence in the Household, 2016

Source: Brunet, 2019, pp. 23, Annex a2

However, the group most prominently identified by Figure 5 is Canada's Indigenous population. Among 20-24-year-old Indigenous Canadians, the NEET rate was 23% in 2018/19: 11 percentage points higher than non-Indigenous Canadians (Figure 5). It is also unlikely that Indigenous youths' high NEET rate is due to a large number of families with children: Indigenous youth's NEET rate was higher for men than women, and split almost equally between inactivity and unemployment (Figure 7). Across both genders, the Indigenous unemployment and inactivity rates were roughly double those of the Canadian average.

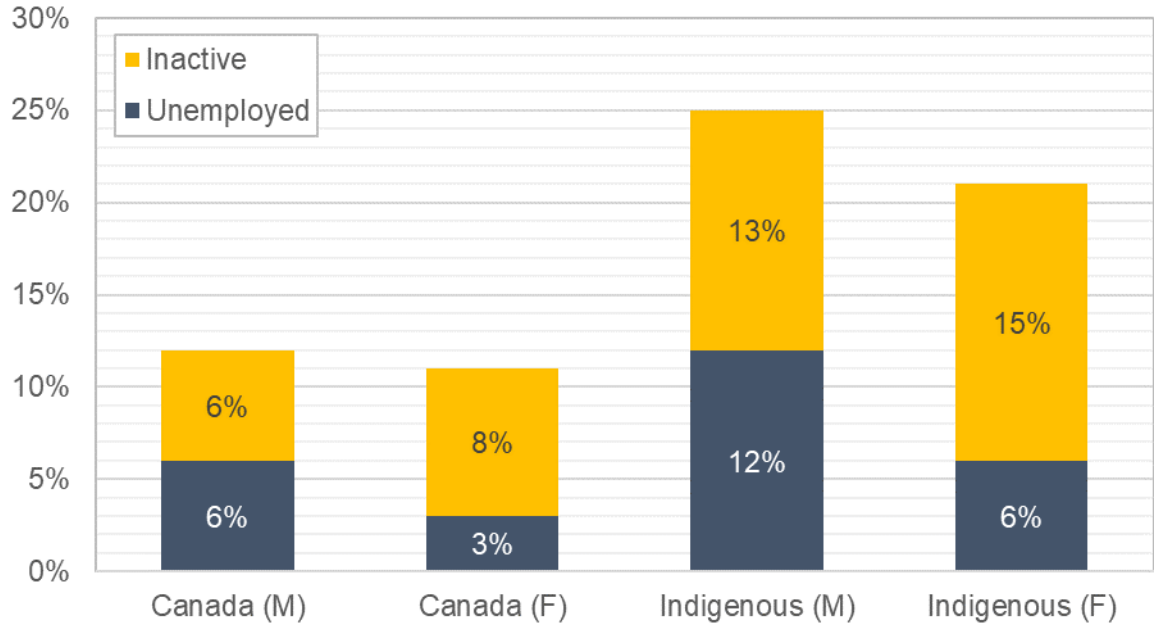

Figure 7: NEET Rates among 20-24 year-old Canadians, by Gender and Indigenous Identify, 2018/19
Source: Brunet, 2019, pp. 23, Annex a2.

In BC, employment and educational outcomes are particularly poor for Indigenous youth living on-reserve (Figure 8 and Figure 9). On-reserve Indigenous youth have higher rates of unemployment and labour market exit than the off-reserve Indigenous population (Figure 8). BC's on-reserve Indigenous population also has lower rates of Dogwood completion and postsecondary credentialization than off-reserve Indigenous people and the non-Indigenous population (Figure 9).

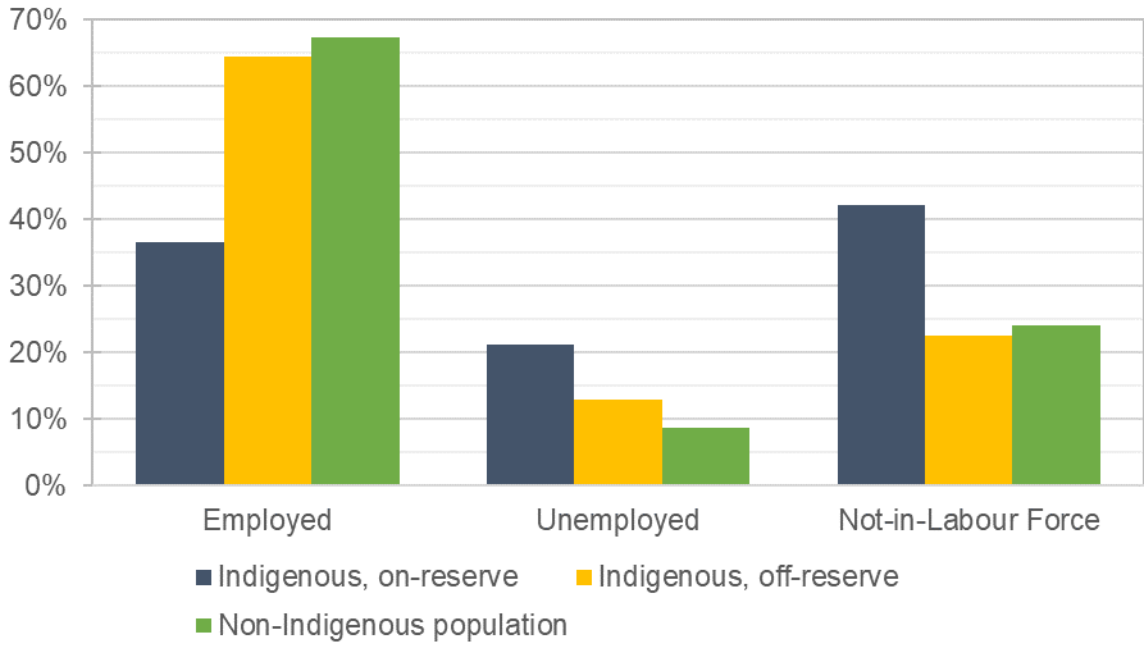

Figure 8: Labour force status of Not-in-Education population by Indigenous Identity and Location of Residence, 20-24 year-old British Columbians, 2016

Source: Statistics Canada, 2018a. The rates for 25-34 year-olds are used as Statistics Canada does not publish data on the 20-24 year-old Indigenous population. Note that, in this figure, the population enrolled in postsecondary education is included in the “Not-in-Labour Force” category.

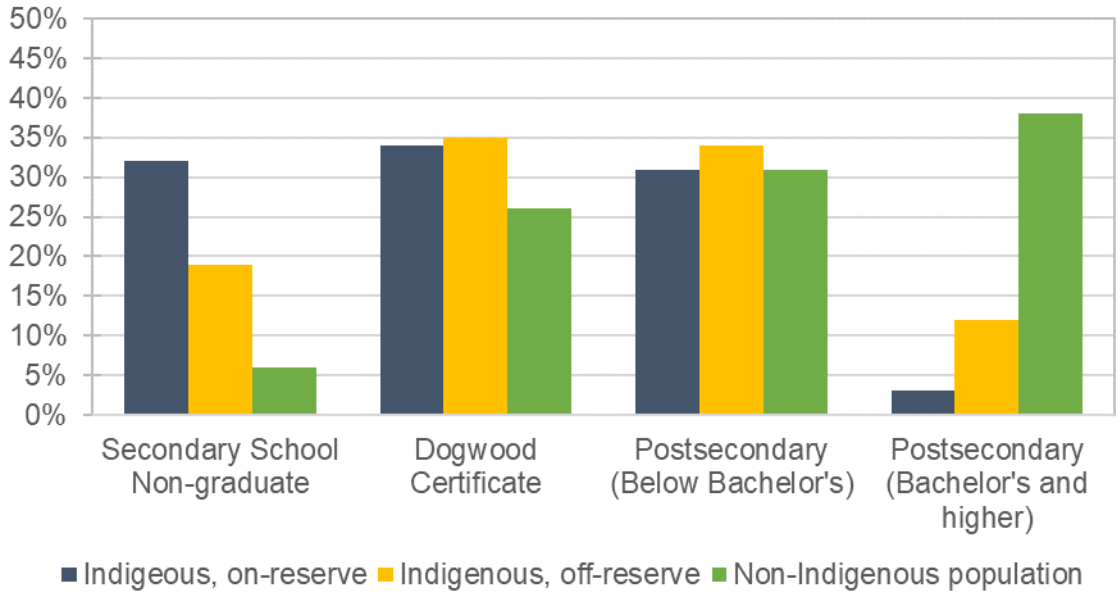

Figure 9: Share of Population by highest educational credential completed, Indigenous Identity, and Location of Residence, 25-34 year-old British Columbians, 2016

Source: Statistics Canada, 2018a. The rates for 25-34 year-olds are used as Statistics Canada does not publish data on the 20-24 year-old Indigenous population.

While BC's Indigenous population is a small proportion of the total provincial population (6% in 2016), the uniquely poor educational and employment outcomes of BC's Indigenous population are worthy of special consideration (Statistics Canada, 2017b). This is especially important for reserve residents, who find employment and complete postsecondary at the worst rates of all British Columbian youth. The reasons for the discrepancy between Canada's Indigenous and non-Indigenous peoples lie outside the scope of this analysis, but are crucial to consider when working on how to ensure that every British Columbian is able to complete their Dogwood, and enter the labour market.

3.3. Findings: Youth Entry into the Labour Market

Evidence from the NEET and the Student Transitions Project suggests there are tens of thousands of British Columbian youth who experience floundering every year. Of each Dogwood-graduating cohort, over 10,000 youth enter BC's postsecondary institutions and do not complete a postsecondary program in five years. Furthermore, the population of NEET 20-24 year-olds in BC totals roughly 32,000.

It is would be unwise to consider all of these youth as floundering. The results above indicate that there is a wide variety of options for youth after completing secondary school. The “family effect” means that the number of women who have dropped out of the labour market due to inactivity may be reflective of personal choice rather than difficulty finding work, and many youth who drop out of academic programs find gainful employment.

However, as described by Mortimer et. al. (2013), there are also many youth who are employed or enrolled in education who are not on a career-track by their mid-20s and are “floundering”. Floundering is not exclusive to the unemployed and labour-market inactive. Floundering includes groups not easily measured by labour market statistics, such as the underemployed and postsecondary dropouts. Based on the information presented above from the Student Transitions Project and the NEET data, I estimate that 20,000 – 40,000 20-24 year-old British Columbians experience floundering in their transition from secondary school into the labour force or postsecondary education each year. Floundering is much more predominant among Indigenous British Columbians, especially for those living on-reserve. The findings above demonstrate that, while every British Columbian must find her or his own pathway into adulthood, many youth struggle to find themselves in a career pathway by their mid-20s. As demonstrated in chapter 1, these youth are likely to struggle to find regular employment throughout adulthood, and communities that fail to integrate youth into the labour market suffer from social dysfunction.

Chapter 4.

Determinants of School-to-Work Transitions

This chapter identifies the impacts that youth's backgrounds, inside and outside the school system, have on achievement in adulthood. Focus is on identifying practices and educational outcomes that lead to strong employment outcomes in adulthood. After identifying these practices, I investigate the prevalence of these factors in British Columbia, which provide insight into the evaluative criteria presented in Chapter 7.

This chapter draws from the research of Liu et. al., who identified the factors that shape when Canadian youth are likely to enter the labour force from 1993 to 2004. Household factors like parental socioeconomic status, region of residence, visible minority status, and educational achievement were all found to have significant impacts on young Canadians' ability to find full-time employment before age 30 (Liu et. al., 2017, pp. 14-16). This chapter uses several sources and explores the impact of these factors and their impact on youth in BC.

4.1. Out-of-School Factors

This section analyzes the factors affecting young people in out-of-school hours. Most important is the youth's home life. This factor is explored using research derived from massive studies of intergenerational achievement in different neighbourhoods (in the US), and census divisions (Canada). This data provides an overview of the major household determinants of children's predicted success or failure, and identify regions of BC where youth are faring particularly poorly.

Other important factors explored, which are of interest to the design of vocational education in schools, are the effect of part-time work and mentorship on youth outcomes. Part-time work and mentorship may both be woven into the education system through vocational education, but their impact on student success must be understood before expanding them in secondary schools.

4.1.1. Household Socioeconomic Status and Household Structure

This subsection briefly addresses the key factors in a child's home life that predict their likelihood of improved labour market outcomes over that of their parents. Intergenerational income mobility is used as a proxy for successful youth transitions into the labour market.

Chetty et. al.'s findings on intergenerational income mobility across the American population explore the effect of childhood environment on intergenerational income mobility. Utilizing the tax data of American households, the study concluded that the social structure of a child's neighbourhood had a massive impact on labour market outcomes for that child in adulthood (Chetty et al., 2018, p. 49). The strongest predictors of upward income mobility were related to the wealth of the neighbourhood: the neighborhood's mean income per household, employment rate, and the share of households above the poverty line were all strong predictors of upward mobility. (ibid., p. 76, fig. V).

However, other important positive factors shape whether children were likely to live in upwardly mobile neighbourhoods. The share of two-parent families had the second-strongest influence on mobility, behind median income (Chetty et al., 2018, p. 76, fig.V). The share of college graduates and the census return rate, which was used as a proxy for social capital, were also important positive influences on the next generation's upward income mobility (ibid.).

Chetty et. al.'s findings illustrate that working role models in children's lives are a precursor to success in the labour market in adulthood. The authors found that having models of employment as a child was more important to an individual's odds of employment as an adult than the actual availability of jobs in the area they lived:

> Evidently, what predicts upward mobility is not proximity to jobs, but growing up around people who have jobs. While we of course cannot conclude that this correlation is driven by a causal effect of peers or neighborhood residents, this result echoes Case and Katz's (1991) finding that children's outcomes are correlated with the characteristics of the company they keep (p. 29).

Similar research in Canada demonstrates that community support is just as important for youth north of the border. Canadian youth with less parental support lack

clarity in defining and pursuing their future goals, leading to poorer choices in educational programs (Molgat, Deschenaux, & LeBlanc, 2011, p. 518). Canadian's educational achievements also mirror that of their parents – for example, the children of Canadians who have graduated from high school are much more likely to graduate than the children of non-graduates (Frenette, 2014, p. 21).

Corak, replicating Chetty et. al.'s methods using Canadian data, found that intergenerational income mobility in Canada is influenced by the same things as it is in the United States. Canadians born in census divisions with a large share of lower-middle income households were much more likely to become low income adults (Corak, 2017, p. 47). Census divisions with a high share of two-parent families had more income mobility than those with a high share of lone-parent families (ibid., p. 49).

4.1.2. Region of Residence

Youth transitions into employment also vary by place of residence. It is important to understand how place affects youth transitions, as BC's diverse communities have very different needs across the province.

Studies of youth transitions in Canada have not found a clear link between community population size and youth labour market outcomes. Liu et. al. found that the population of a census area had an insignificant impact on a youth's likelihood of finding employment (2017, p. 9). Their findings were consistent across socioeconomic groups, suggesting that the size of the community is not an important determinant for youth from all types of households. Brunet's (2019, p.19) study found no differences between the urban and rural NEET rates of the 20-24 year-old cohort.

Youth patterns of labour market entry identify variation across provinces, especially between Quebec and the rest of Canada. Canadians under age 25 residing outside Quebec are more likely to be in full-time employment than Quebec residents (Liu et. al., 2017, p. 9). However, Brunet found that the NEET rate among 20-24 year-olds in Quebec was tied for the lowest in Canada, and that the NEET rate among 25-29 year-old Canadians was the lowest in Quebec (2019, p.23; 2018, p.5). Brunet notes that the differences in Quebec are likely explained by greater educational attendance among the 20-24 year-old Quebec residents and a lower rate of labour market inactivity among 25-

29 year-old Quebec women (2019, p.8; 2018, p.5). These differences may be partially explained by two policy differences between Quebec's government and those of other provinces: less expensive postsecondary tuition, and heavily subsidized pre-Kindergarten childcare. These policies are outside the scope of this project, though they do indicate that secondary education only plays a partial role in effective youth transitions to employment in early adulthood.

In 2019, BC was tied with Quebec for the lowest 20-24 year-old NEET rate at 10% (Brunet, 2019, p.23). Unlike in Quebec, a larger share of BC's non-NEET population was working than enrolled in education, indicating that a strong labour market in BC was enabling people in their early-20s to find work. This strong performance for BC is encouraging, but it is also important to determine where the population is in the province that is struggling to find employment in their early-20s.

These areas may be identified when considering provinces that have higher NEET rates than the national average, as they describe effects that can identify geographic areas where there are major barriers to employment. In Brunet's surveys of 20-24 year-old and 25-29 year-old Canadians, residents of Newfoundland and Labrador had a higher NEET rate than the population average, driven by high unemployment (2019, p.8; 2018, p.5). Brunet's findings contrast with those of Liu et. al., who found that oil-producing provinces were places where youth had a higher likelihood of finding employment (Liu et. al., 2017, p. 15). This difference is explained by when both sources collected their data: Liu et. al. use 5 population panels from 1993 to 2011, while Brunet uses Labour Force Survey data from 2017 to 2019 (Liu et. al., 2017, p.3; Brunet, 2018, pp. 16, 18; Brunet, 2019, pp. 21, 23). The differences in findings between Liu et. al. and Brunet, which most pronounced in Newfoundland and Labrador, but also observed in the Prairies, are driven by the collapse of employment in the petrochemical sector in the mid-2010s.

While no study has reported the Canadian NEET rate at geographical levels below the provinces, Corak's work on intergenerational mobility is a suitable substitute that identifies Census Districts where youth are struggling to enter the labour market. Corak found that BC had the highest levels of income mobility of all Canadian provinces in 2016, driven by high economic growth in the Fraser Valley and the gas-producing northeast (2017, p. 35, fig.9).

Intergenerational poverty, however, is a major issue in specific areas of BC. Children born into households at or below the 20th income percentile in BC were less likely to move out of that quintile or move into the top quintile than children in Ontario, Saskatchewan, or Alberta (Corak, 2017, p.35, fig.9). This means that, while there are opportunities for most British Columbians, those born in areas of poverty are unlikely to improve their situation in adulthood.

BC's areas of entrenched poverty are prevalent in specific remote communities with a large Indigenous population (Figure 10). This confirms the findings of Chapter 3, which found poor student transitions into the labour market among BC's Indigenous population, especially those residing on-reserve. Corak's work demonstrates that connections between the labour market and these communities are particularly tenuous – where youth often must choose between living in their home community and finding well-paying work.

Census District	Share of Population Indigenous Identity
Squamish-Lillooet Regional District	12.17%
Kitimat-Stikine Regional District	35.91%
Mount Waddington Regional District	30.71%
Skeena – Queen Charlotte Regional District	44.90%
Stikine Regional District	49.32%
Central Coast Regional District	61.91%
British Columbia (provincial total)	**5.93%**

Figure 10: BC (province) and BC Census Divisions with >40% likelihood that children born in the bottom quintile of national income will remain in the bottom quintile in adulthood, and share of census division population with Indigenous identity, 2016

Source: Corak, 2017, p. 28, fig.5; Statistics Canada, 2018b; ibid., 2018c; ibid., 2018d; ibid., 2018e; ibid., 2018f.

The findings on interprovincial and intra-BC variation in youth employment outcomes indicate that youth in rural and remote communities may be especially at-risk of poor transitions from secondary school into the labour market. Combined, the findings from Brunet, Corak, and Lui et. al. demonstrate that, while rural youth are no more likely than urban youth to become NEET in young adulthood, they are more likely to work rather than attend postsecondary. In communities where youth struggle to transition into

the labour market, the youth NEET rate is very high. As Corak demonstrates, there are specific communities in BC where youth have a lot of difficulty entering the labour market. In BC, these populations are disproportionately Indigenous, making transitions from school to work particularly challenging for Indigenous British Columbians residing far from major urban centers or booming natural resource development.

4.1.3. Working While in Secondary School

A youth's work-life while they are in secondary school impacts transition into post-secondary education or employment. There is disagreement in the academic literature on part-time work's impact on students' ability to transition into the labour market after secondary school graduation: some researchers have found that part-time work has little effect on students' educational achievement, while others found that part-time work negatively impacts academic outcomes (Parent, 2006, p. 1148; Neyt, et. al., pp. 22-23).

This inconsistency is explained with consideration of the type of work taken by a student. Mortimer, Staff, & Vuolo found that long-term, low-activity employment has a negligible effect on student's academic performance and improves employment outcomes after graduation (2013, p. 158). However, Parent found that long hours negatively impact academic achievement, which ripples negatively into the youth's labour market performance after completing secondary school (2006, pp. 1126-1127).

Complicating these findings is that the point at which part-time work negatively impacts educational achievement is at a different place for every individual (Mortimer, Staff, & Vuolo, 2013, p. 159). Therefore, policies prompting students to begin working, even for educational purposes, must be flexible enough to navigate this reality for each student.

Limited data is available on the number of secondary school students in BC who are currently in part-time work. The youngest cohort for whom part-time employment data is available is that aged 15 – 24, which includes a large population of workers who have already left secondary school.

4.1.4. Mentorship

Mentorship is a relationship between a youth and a professional who is already established in the labour market, preferably in the field the student is interested in. The mentor provides general information on the labour market to assist the youth in their transition to the labour force, and may teach them professional skills about the occupation they are employed in.

Mentorships are extraordinarily effective at assisting youth in transitioning from education to work. Renn et al. found that youth with a mentor were more focused while looking for work, and more likely to network with other professionals in their field of choice (2014, p. 422). Mentors, with their inside knowledge of the job market, develop belief and motivation in their mentees to pursue achievable career goals and set realistic standards (ibid., p. 423; 430). Mentorships are exceptionally effective at assisting struggling youth: School-based mentorship programming benefits students considered at-risk of dropping out more than other youth (Green & Rogers, 1997, pp. 34-36).

Mentorships have positive spillover effects on other relationships. A clear example is from mentee to mentor. In Alberta, employer participants in a youth work program reported improvements in their staff, whose training was partially covered by the program. The employers preferred local youth to the out-of-town labour they would have hired otherwise (Brigham & Taylor, 2006, p. 168).

A mentorship relationship's benefits also extend to students outside of the mentor-mentee relationship. Higham & Farnsworth found that skills and knowledge passed from mentor to mentee is passed by mentees to youth in their social circle (2012, p. 464). Older students became employment brokers for the younger cohort, using the connections they built through their mentors to connect younger students with employment opportunities (ibid.).

4.2. Factors within Schools

This section addresses the importance of basic skill development and credential completion to employment outcomes. Data is also presented on the status of these two factors in BC's school system, which identifies how effectively BC transfers basic

competencies to students, and the value of educational credentials to lifelong employment outcomes in BC.

4.2.1. Literacy and Numeracy

Well-functioning schools guarantee that students are equipped with broad academic competencies that prepare them for the working world. Basic literacy and numeracy prepare youth for success in every field. The OECD acknowledged this in a major report on vocational education:

> … [P]rogrammes involving early specialisation [sic] require sufficient attention to numeracy, literacy and other general academic skills, as well as other wider soft competences, to provide the foundation for lifelong learning and effective citizenship, as well as the foundation of competences necessary to develop and maintain a successful career through a continuing blend of learning and work. (Field, Hoeckel, Kis, & Kuczera, 2010, p. 14)

General education develops soft skills that provide flexibility in the workplace – literacy and numeracy are the foundations upon which more specialized skills are developed (ibid., p. 60). Literacy and numeracy result in long-term economic gains: a 2006 analysis of Canadians without secondary school diplomas found that functional literacy had a stronger positive impact on weeks worked than the number of years spent in education or Indigenous status (Finnie & Meng, 2006, pp. 9-10).

BC's education system has historically performed well at promoting basic literacy and numeracy in its population: according to the OECD's Programme for International Student Assessment (PISA), BC's secondary students ranked above the Canadian average in rounds prior to 2018 (O'Grady, et al., 2019, pp. 103, Table B.1.14a; 162, Table B.1.15a). However, BC's performance in reading and mathematics declined significantly from 2015 to 2018. BC is now at the Canadian average in reading, and below the nation's average in mathematics (ibid.). BC's PISA performance is compared against international jurisdictions in Chapter 6.

4.2.2. Educational Credentials

Credentials, obtained through completion of an education program, are a crucial component of a successful school-to-work transition. Credentials signal competency in

the labour market: a Dogwood diploma indicates proficiency in a range of subjects and skills, and postsecondary credentials demonstrate competency in a specific skillset or subject matter.

Educational credentials have value beyond the skill acquisition they represent. A study of Canadians adults found that if the only difference between two job applicants was a secondary school diploma, the individual with the diploma was much more likely to be hired (Frenette, 2014, p. 23). In 2014, Statistics Canada estimated that a secondary school diploma was worth $131,000 to $175,000 in workplace earnings over the average worker's life (2010 CAD) (ibid., p. 18).

Across the Canadian population, educational attainment leads to higher wages, especially among those with a university-level Bachelor's, Master's, or Doctorate degrees (Statistics Canada, 2017a, pp. 2-3, Charts 1a & 1b). Gunderson and Krashinsky found that a Bachelor's graduate out-earned the average non-graduate of secondary school by over 40% in 2015 (2015, pp. 1085, Table 1).

BC is no exception. Secondary school graduates out-earn non-graduates, followed by hundreds of thousands in additional lifetime earnings for those with postsecondary Certificates and Diplomas (Figure 11). Those with Bachelor's and postgraduate degrees earn even greater returns (Figure 11). However, there is another financially rewarding pathway: completing a journeyperson trades certification (Figure 11). The added income of a vocational certificate or diploma and journeyperson certification result in expected lifetime income returns that equal those of the average Bachelor's graduate.

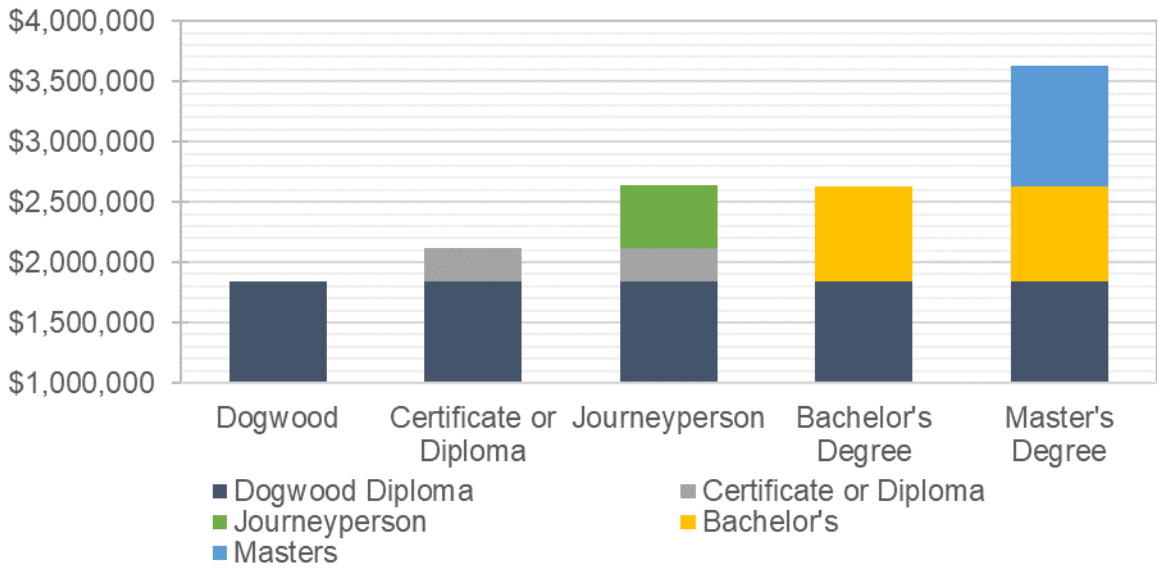

Figure 11: Figure 11: Expected Lifetime Earnings by Educational Credential in BC, 2011 (2011 CAD)

Source: BC Stats, 2014

Youth who have basic educational credentials are much more likely to be employed than those who do not. Secondary school graduates have more lifetime working years than non-graduates, as non-graduates receive fewer job offers and stay in positions for less time than their graduates (Frenette, 2014, pp. 14-15; Ferrall, 1997, 127). Canadians with postsecondary credentials have higher lifetime earnings than those who only completed their secondary school diploma, but both are likely to find consistent employment. The largest reductions in Canada's 20-24 year-old NEET rate are made at secondary school completion. Secondary school graduates had a NEET rate 25 percentage points lower than non-graduates, while postsecondary graduates had a NEET rate only 2 percentage points better than secondary graduates (Figure 12).

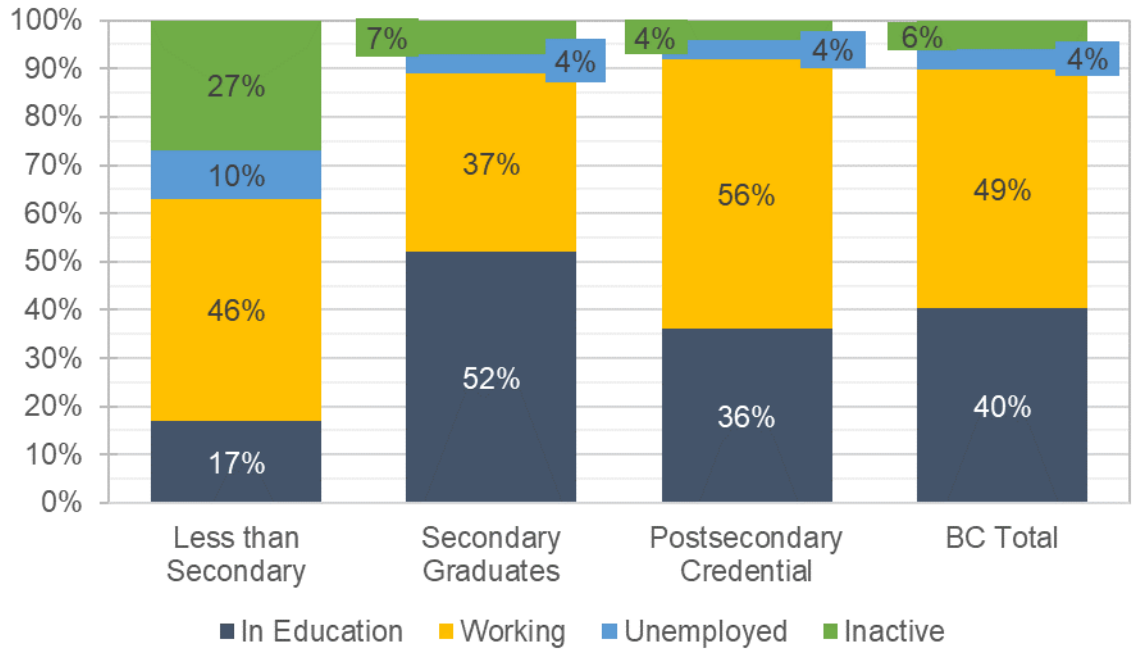

Figure 12: Labour Market Status among 20-24 year-old Canadians, by Highest Level of Education Completed, 2018-19
Source: Brunet, 2019, pp. 23, Annex a2

The findings on the value of education intersect with household socioeconomic status. Lui et. al. (2017) separated the youth population into thirds by parental socio-economic status, and found that those with low-socioeconomic status were the most likely to have entered full-time employment prior to turning 21, but were also the least likely to be employed full-time between the ages of 26 and 29 (Liu et. al., 2017, p. 6). The authors conclude that Canadian youth from households with high- or middle-socioeconomic status have greater access to postsecondary education, and these youth are more likely than youth from low-income households to not work full-time in their first three years of adulthood due to school attendance (ibid).

4.3. Findings: Determinants of School-to-Work Transitions

This Chapter demonstrates that an individual's transition from the education system into the labour market is shaped by many factors. While there is no single factor that determines students' success, there are best practices that may be followed across pathways. Mentorship and part-time work demonstrate that relationships students form with working professionals improve future employment outcomes. The role-modelling behavior discussed by Chetty et. al. affirms the literature on mentorship and part-time

work: youth who have strong relationships with working adults have stronger labour market outcomes in adulthood.

Educational credentials are also crucial predictors of success. Relative to those who do not complete secondary, a Dogwood Diploma and any postsecondary credential dramatically improves one's likelihood of finding work. While there are further income gains to those who acquire academic Bachelor's, Master's or Doctorate credentials, these are not necessary for finding consistent employment.

However, this chapter also demonstrates that the school system's role in determining youth employment outcomes is limited. Household factors have a major influence on the likelihood a child will find employment as a young adult.

The reality entrenched poverty in remote BC suggests that the school system must be flexible, as youth in different areas of the province face different challenges when entering postsecondary education or the labour market. In particular, the secondary school system must be improved in British Columbia's remote regions among Indigenous communities, where student transitions from secondary to work and postsecondary are poorest.

The findings presented above illustrate that the school system makes the biggest difference in assisting students into work through low levels of education. Dogwood diploma completion generates strong rewards to youths' odds of finding employment. Any further type of postsecondary education increases the odds that a young person will find employment after completing their education.

Chapter 5.

Case Studies

This section considers the educational systems of several jurisdictions. The secondary school vocational education programming and occupational education regulations are examined, and the system's outcomes are judged by their education and employment outcomes for youth.

The cases considered are BC, Australia, Germany, and Switzerland. All cases are in federal systems, where education is the responsibility of the sub-federal unit: provinces in Canada, states in Australia, Länder in Germany, and Cantons in Switzerland. Australia, Germany, and Switzerland were selected as case studies because they have consistently achieved a lower NEET rate than Canada since the 2008 recession (Figure 13).

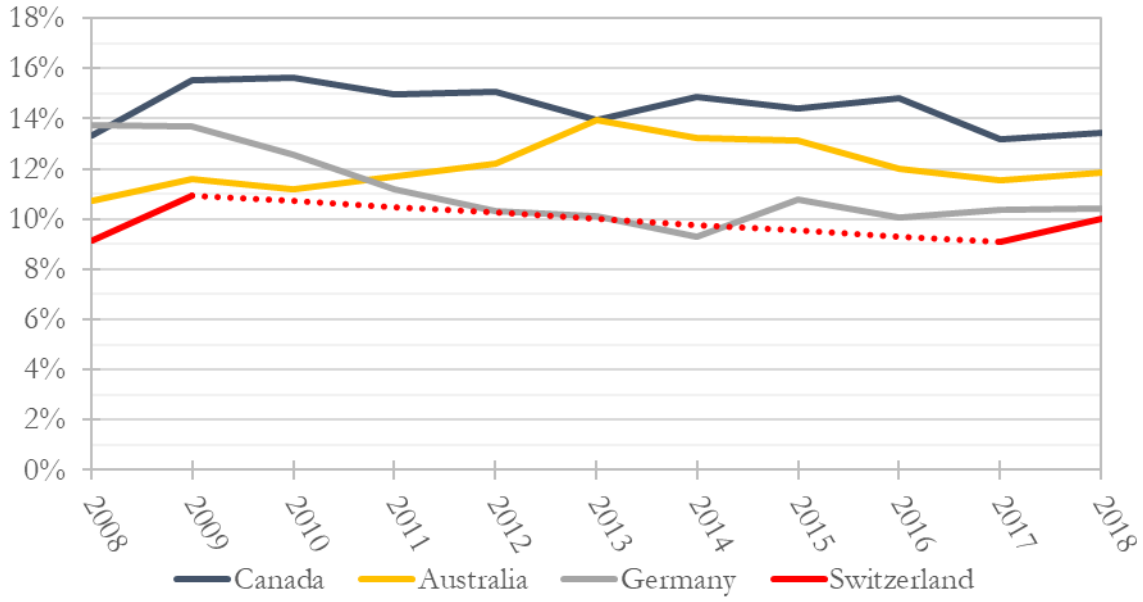

Figure 13: 20-24 year-old NEET Rate in Selected Countries, 2008-2018
Source: OECD, 2020c. Swiss data for 2010-2016 is estimated (dotted line).

5.1. BC

5.1.1. Vocational Education Programs in BC

Students in BC's provincial education system may take vocational courses as a component of their general education. Called "Career Programs" by schools, these courses are integrated into the existing secondary school schedule, although they may operate in a workplace or postsecondary institution.

Career Programs are authorized in BC by the Education Minister's Work Experience Order, under the authority of the School Act (Ministry of Education, 2019g). There are several Career Programs authorized under the Act (Figure 14). Except for "Career Preparation" programs, Career Programs are available only to students in grade 11 or 12 (Ministry of Education, n.d.-d).

Ministerial Order Classification	Program Description	Credentials available outside of Secondary School
Considered in Chapter 5:		
Career Preparation	Generalized work experience designed to help students identify vocational preference or prepare for specialized work experience or postsecondary training.	General occupational credentials (e.g. First Aid).
Career Technical Centre	Post-secondary courses in an applied technology or trades area. Students earn credits towards secondary school graduation and a post-secondary credential.	Postsecondary credits
Secondary School Apprenticeship	Workplace-based training where secondary students register as apprentices with the Industry Training Authority.	Apprenticeship credit
Profiled in Appendix B only:		
Co-operative Education	A customized program for adult students who have not graduated. This program emphasizes general skills and work experience to earn students credit towards an Adult Dogwood.	None
Work Experience	Students engage with a workplace through unpaid work or observation.	None

Figure 14: Career Programming in the "Work Experience" Ministerial Order
Source: Ministry of Education, 2019g

Completion of a Career Program provides a student with credits towards the completion of their Dogwood Diploma. Credits earned from Career Programs may only count towards the elective requirements of a Dogwood Diploma, not the "core" courses that all students must complete (Ministry of Education, n.d.-d). This study only considers the Career Programs that provide secondary school students with credentials that may be transferred outside of their secondary school. These programs are Career Preparation, Career Technical Centre, and Secondary School Apprenticeship. Appendix B provides more information on all vocational learning available to secondary school students in BC.

Career Preparation programs are designed to serve as the entry into a vocational pathway: these programs provide hands-on activities for students in lower secondary

school (Ministry of Education, n.d.-c). These programs may offer basic skill certification (e.g. First Aid), although the specifics of the programs differ across the province (Ministry of Education, 2018c, p. 4).

Career Technical Centre and Secondary School Apprenticeship programs offer students postsecondary-level education for secondary school credit. Both programs offer courses that must be taught by certified instructors in the occupational skill, and students enrolled in these programs obtain credits and hours that are transferrable into the province's postsecondary institutions (Ministry of Education, 2018a). Courses may be taught on-site, with enough student demand, or students may be placed in a postsecondary classroom. Career Technical Centres offer training in a wide variety of fields, while Secondary School Apprenticeships are only available in trades certified by the Industry Trades Authority (ITA) (Burnaby School District 41; Industry Training Authority, 2018a). Many Career Programs include fees for participants, although the ITA pays $3,200 to every school district that graduates a student through the Secondary School Apprenticeship program (Industry Training Authority, 2017b, p. 2).

All Career Programs in BC are administered by school districts. Some districts operate programs from a central distributed learning centre, while others share Career Program duties among teachers, counselors, and administrators (Ministry of Education Staff Member, 2019). School districts receive funding for all programming on a per-credit basis from the Ministry of Education, and there is no adjustment to the formula for districts that enroll more students in Career Programs (Ministry of Education, 2019b). Under the per-credit funding formula, districts are incentivized to enter students in career programs. Students in Career Programs can obtain more credits through their participation, often earning far beyond the elective requirements for a Dogwood diploma (Beeston, 2019).

5.1.2. Regulation of Vocational Education in BC

Career Programs in the skilled trades are governed by the ITA. A provincial crown agency, the ITA's youth directorate assists school districts in program development and administration, and offers financial incentives to school districts and students to participate in its programming. Of the 10,927 enrollments in BC's Career

Programs in the 2017/18 school year, 52% of them were in an ITA-regulated program (Industry Training Authority, 2018b; Ministry of Education, 2018b).

Other programs are regulated by the Ministry of Advanced Education and Skill Development through the postsecondary institution that delivers the program. Career Technical Centre programs are delivered as accredited postsecondary programs, and must be certified in the same manner as if the course were being delivered by a postsecondary institution.

5.1.3. Assessing BC's Vocational Education Programming

Students who complete a Career Program will have completed a basic level of occupational training. Completion of as many Career Programs as possible will have a student finish the first year of certification in a trade, saving coursework and apprenticeship hours if they continue to pursue their trade in postsecondary. However, students cannot complete any occupational certification while in secondary school; the programs are not long enough.

Enrollment in BC's Career Programs is not common. If all reported enrollments in Career Programs were by unique students, only 6.8% of BC's upper-secondary students enrolled in a Career Program in 2017/18 (Ministry of Education, 2018b). Over 70% of Career Program enrollments are in the most basic program: Career Preparation (Figure 15). Since 2011, Career Preparation has made up over 70% of all Career Program enrollment, and total Career Program enrollment has represented less than 10% of the student population in each year (Ministry of Education, 2018b).

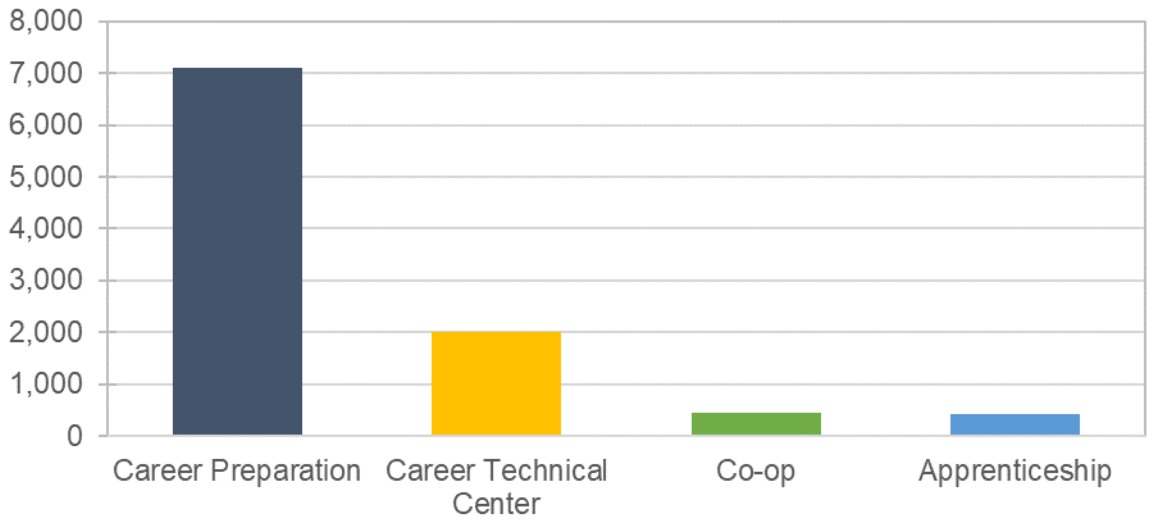

Figure 15: Career Program Enrollment in BC, 2018/19
Source: Ministry of Education, 2018b

Career Program's impact on student's career choices is unclear. In 2017/18, only 37% of participants in ITA-regulated Career Technical Centre and/or Secondary School Apprenticeships had continued to the next step of their trades' education within 18 months of graduation (Industry Training Authority, 2018b). This may, however, be a reasonably high figure: much less than 37% of the student population initially enrolls in the trades after secondary school. There is no data on whether enrollment in a Career Preparation program makes youth more inclined to enroll in vocational postsecondary education after receiving their Dogwood Diploma.

Stigma against vocational education is a major reason for low enrollment in BC's Career Programs. Career program administrators have identified bias against trades-focused education among students, parents, educators, and administrators as a major barrier to program expansion (Beeston, 2019; Ministry Staff Member, 2019; Parkin, 2019). Internationally, Canadian youth are not likely to consider a trades career while in secondary: only 7% of 15-year-old Canadians expect to work in a high-skill blue collar job as an adult – far below the OECD average (Field, Hoeckel, Kis, & Kuczera, 2010, p. 34).

5.1.4. Findings: BC

Vocational education occupies a marginal role in the province's secondary schools. Career programs, which link to postsecondary education and employment, are

not widely adopted, or administered throughout the province. In 2017/18, the average school district only spent $270 per upper-secondary student on Career Programs, 0.74% of total operational spending (Ministry of Education, 2019a; 2020b).

Low levels of participation in Career Programs suggest that the long-lasting impact of BC's Career Programs is negligible on the general student population. These programs lack the capacity and popularity to effectively reach the thousands of youth who struggle to integrate into the labour market and further education following secondary school completion.

5.2. Australia

5.2.1. Vocational Education Programs in Australia

The Australian school system is similar to BC's. Students in Australia's public schools attend a single, general education pathway until the end of secondary school (Diplomatic Academy, n.d., p. 10). Vocational education in secondary schools is limited to specific classes, which provide credits towards a secondary school completion certification (Field, Hoeckel, Kis, & Kuczera, 2010, p. 13). However, Australian vocational education courses are very different from BC's, and achieve much higher enrollment.

Australian secondary school students may complete low levels of occupational certification while still in secondary school. These programs provide general vocational skills, and specialized skills are not taught until postsecondary (Department of Education, Skills, and Employment, n.d.). Over two thirds of vocational enrollments were in Certificate I and II courses, which provide students basic workplace competencies (Field, Hoeckel, Kis, & Kuczera, 2010, p. 92; Department of Education, Skills, and Employment, n.d.). Further study at a postsecondary institution is required for a student to obtain full occupational certification (Department of Education, Skills, and Employment, n.d.). Enrollment in apprenticeships is relatively rare: in 2017, 5% of vocational education enrollments were in apprenticeship programs (Department of the Prime Minister and Cabinet, 2019, p. 92).

Vocational education is delivered by state-run schools, called Technical and Further Education Institutions (TAFE), and private training organizations certified by the

Australian Skills Quality Agency (ASQA) (Australian Skills Quality Authority, 2018, pp. 3-5). TAFEs are postsecondary institutions that are similar to BC's Community Colleges and Institutes of Technology.

5.2.2. Regulation of Vocational Education in Australia

Program trainers are regulated by the ASQA, a federal government agency (Australian Skills Quality Authority, n.d.-b). Industry representatives and state representatives contribute to the design of vocational competencies that must be taught to students (Australian Skills Quality Authority, 2013). The ASQA evaluates trainers on their curriculum's alignment with these core competencies, ensuring that training curricula are standardized across the country (Australian Skills Quality Authority, n.d.-a; Hoeckel, Field, Justesen, & Moonhee, 2008, pp. 9-10).

The ASQA has standardized basic credentials across a wide variety of occupations. Further study at a postsecondary institution is required for a student to obtain a Diploma or Associate's Degree in their field of study, as in BC (Department of Education, Skills, and Employment, n.d.). The ASQA offers 59 streamlined training packages specifying the basic requirements of skill certification to training providers, and oversees the credentialization of 1,458 programs (Department of the Prime Minister and Cabinet, 2019, p. 56). In contrast, Canada's Red Seal program only includes 35 trades in its credentialization system (Red Seal, 2018). Australia's programming covers a larger group of professions, in industries as varied as Arts & Culture, Business, Health, Recreation, and Design, far beyond the basic trades offerings of Red Seal (ibid.; Department of Employment, Skills, Small and Family Business, n.d.).

5.2.3. Findings: Australia

Australian vocational education programs are similar to BC's Career Technical Centre programs: students attend post-secondary level courses while in secondary school. Australian vocational education courses are also optional options for students in secondary school, much like those in BC.

The major differences between Australia and BC's systems of vocational education is the standardized regulation of occupational credentials across training

providers, and the availability of a recognized credential to be obtained by secondary school students. Nationwide recognition of occupational credentials standardizes employer evaluations of prior learning. And, that students receive a credential recognizing this learning that they may present to schools and employers. Programs are therefore valuable for youth: students know that choosing to take a vocational education course will carry value to employers and postsecondary institutions across the country.

5.3. Germany

5.3.1. Vocational Education Programs in Germany

German students are sorted into vocational and academic learning pathways in lower secondary prior to attending different educational institutions in upper secondary (Hippach-Schnieder & Huismann, 2016, p. 17, Table 7; 37; Hoeckel & Schwartz, 2010, pp. 9, 63, Annex B, fig.B.1). Students in the vocational pathway must complete occupation-specific training and general education requirements to graduate from secondary. In the general education pathway, students are enrolled full-time in academic general education (Hoeckel & Schwartz, 2010, p. 10).

Pathway completion is recognized with secondary completion credentials from the type of school the student completes. Graduates from Germany's general education track receive credentials that allow them to progress into the country's universities (Hoeckel & Schwartz, 2010, p. 9; Federal Institute for Vocational Education and Training, n.d.). Graduates of vocational-track education receive credentials recognizing vocational certification as their secondary completion. Youth with this secondary school credential may apply for postsecondary education in Germany's technical institutes (Hoeckel & Schwartz, 2010, p. 9; Federal Ministry of Education and Research, n.d.; Hippach-Schnieder & Huismann, 2016, p. 13, fig.1).

Vocation-path students are traditionally required to complete an apprenticeship. Students in an apprenticeship spend several days a week at a worksite instead of the classroom: this is known as the "dual system" (Hoeckel & Schwartz, 2010, pp. 18-19; Field, Hoeckel, Kis, & Kuczera, p. 32). However, not all students in the vocational stream complete an apprenticeship: other students attend full-time education in an occupation-specific school (Field, Hoeckel, Kis, & Kuczera, p. 32).

German vocational-pathway secondary students must complete their occupational entrance exam to completed secondary (Hippach-Schnieder & Huismann, 2016, pp. 35-36). Final examinations test students' specialized occupational knowledge and skills; general literacy, numeracy, and knowledge are not tested; the OECD has identified this as a weakness in the German system, as vocation-pathway students have little incentive to work on general skills that will not be tested (Hoeckel & Schwartz, 2010, pp. 39-40).

5.3.2. Regulation of Vocational Education in Germany

The federal government, Länder governments, corporations, and unions are all involved in the regulation of German vocational education. The federal government regulates occupational competencies at the national level, while the Länder are responsible for education (both vocational and general) delivery through government-run schools, and the regulation of firm-hosted work experience (Hippach-Schnieder & Huismann, 2016, p. 14). There are over 300 occupations in Germany for which training is accredited through the German federal government (Federal Ministry of Education and Research, n.d.).

Industry-specific committees of government, employer, and union representatives are responsible for the standardization of vocational education and testing in Germany (Hippach-Schnieder & Huismann, 2016, p. 15). As these formal committees split the responsibility for regulation among all committee members, employers and trade unions have a major influence on curriculum design and program administration within each Länder (ibid., p. 14). Though these committees' function with a high degree of autonomy, they are regulated by the federal government to ensure consistency in training standards across the country (ibid., p. 37).

5.3.3. Findings: Germany

German industry committees enable effective coordination of training standards across the country. Governments, employers, and unions are all involved in the delivery of vocational education, which ensures that students in the vocational pathway are connected to work after secondary. However, this approach does have drawbacks for students. As German lower-secondary students are streamed into vocational or

academic pathways, young Germans in the vocational pathway have few options for moving into the academic pathway after age 13 or 14.

The German vocational education system is a true alternative to BC's general education system. German vocational education is governed by the authorities with which youth will be involved throughout their entire working lives. The advantage is stability and certainty in a student's transition to work, and the disadvantage is a lack of upward mobility for those sorted into the vocational track. This system requires the government to determine which students will be able to attend university at an early age – a radical difference from the situation in BC.

5.4. Switzerland

5.4.1. Vocational Education Programs in Switzerland

The Swiss vocational education system is like the German system: students are sorted into a vocational or academic pathway, with vocational education pathways leading to occupational certification. However, an innovate credential system leaves clear opportunities for students from the vocational pathway to upgrade into academic postsecondary programs (State Secretariat for Education, Research and Innovation, 2019, p. 6). Secondary students may complete the Federal Vocational Baccalaureate in a year of study for admission into Switzerland's universities of the applied sciences or, if the student chooses to also complete the University Aptitude Test, into a university (ibid., p. 14; Hoeckel, Field, & Norton, 2009, p. 13). This route to university is not present in Germany.

Despite the existence of the Federal Baccalaureate, the Swiss system is still very similar to the German system in aggregate. Students are still sorted in lower secondary into academic and vocational education tracks, which dictate the type of postsecondary institutions they may attend (State Secretariat for Education, Research and Innovation, 2019, p. 6). Students graduating from vocational education are also incentivized to focus primarily on the completion of their occupational certification, which provides them with the opportunity to immediately enter the labour force, rather than building general competencies.

5.4.2. Regulation of Vocational Education in Switzerland

The Swiss vocational education system is regulated by the federal government, which exercises quality assurance and monitoring of over 230 occupational area training plans that guide educators (State Secretariat for Education, Research and Innovation, 2019, p. 8; Hoeckel, Field, & Norton, 2009, p. 13). The cantons (lower-level governments) create and administer programs in compliance with federal regulation. Cantons authorize public and private training providers to host apprentices and are responsible for the provision of education in vocational schools (State Secretariat for Education, Research and Innovation, 2019, p. 9). The cantons are also primarily responsible for the funding of Swiss upper-secondary vocational education (Hoeckel, Field, & Norton, 2009, p. 14).

Non-state actors are heavily involved in the design and delivery of Swiss vocational education. Professional organizations, unions, and governments work on industry committees to determine the content of occupational training plans (State Secretariat for Education, Research and Innovation, 2019, p. 9). Most vocational programs include periods of study at industry-sponsored schools, or an apprenticeship with a private employer (ibid., pp. 9-10). These programs are organized within cantons, where trade associations work with the relevant canton to allocate seats and funding into different occupational programs (ibid.).

5.4.3. Findings: Switzerland

The Swiss system is a more flexible version of the German approach. More Swiss students enroll in vocational education than in Germany, but students also have avenues to transition into academic general education if they should so choose.

5.5. Case Comparison

Jurisdiction	Vocational Education Type	Credentials	Program Administration	Credential Regulation
BC	Course-based, part-time	Postsecondary and apprenticeship credits	School district	Federal (Red Seal), Provincial (all other)
Australia	Course-based, part-time	Postsecondary and apprenticeship credit	School district	Federal (postsecondary modules), State (occupation-specific)
Germany	Path-based, full-time	Occupational certification	State (Länder), businesses and unions	Federal
Switzerland	Path-based, full-time	Occupational certification, postsecondary entry diploma	State (Canton), businesses	Federal

Figure 16: Vocational Education in Selected Jurisdictions

The biggest difference between the systems is the segregation of lower secondary students between vocational and academic pathways in Switzerland and Germany. In these countries, many students are primarily engaged in vocational education in upper secondary school. In BC and Australia, vocational education plays a marginal role, as a suite of optional course that may be added on to the general education program. There is one secondary school graduating credential obtained by most students in BC and Australia; in Germany and Switzerland, secondary school graduating credentials vary depending on the student's education pathway.

Another major difference between BC and the other cases is in the availability of vocational credentials to secondary school students. Secondary school students in BC may receive course credits from a towards an occupational certification, but must transfer these to a postsecondary institution and complete additional schooling to receive a credential. In Australia, Germany, and Switzerland, centralized occupational training program design provides valuable credentials. These credentials are transferrable across postsecondary institutions, and recognized across the country.

5.5.1. Educational Outcomes

The approaches taken by the jurisdictions result in dramatically different rates of enrollment in vocational education. The vocational education systems of Australia, Germany, and Switzerland have higher levels of enrollment in vocational education than in Canada (Figure 17). The high rate of vocational education enrollment in Australia demonstrates that schools may achieve strong enrolment in vocational education without forcing students into different pathways, as in Germany and Switzerland (Figure 17).

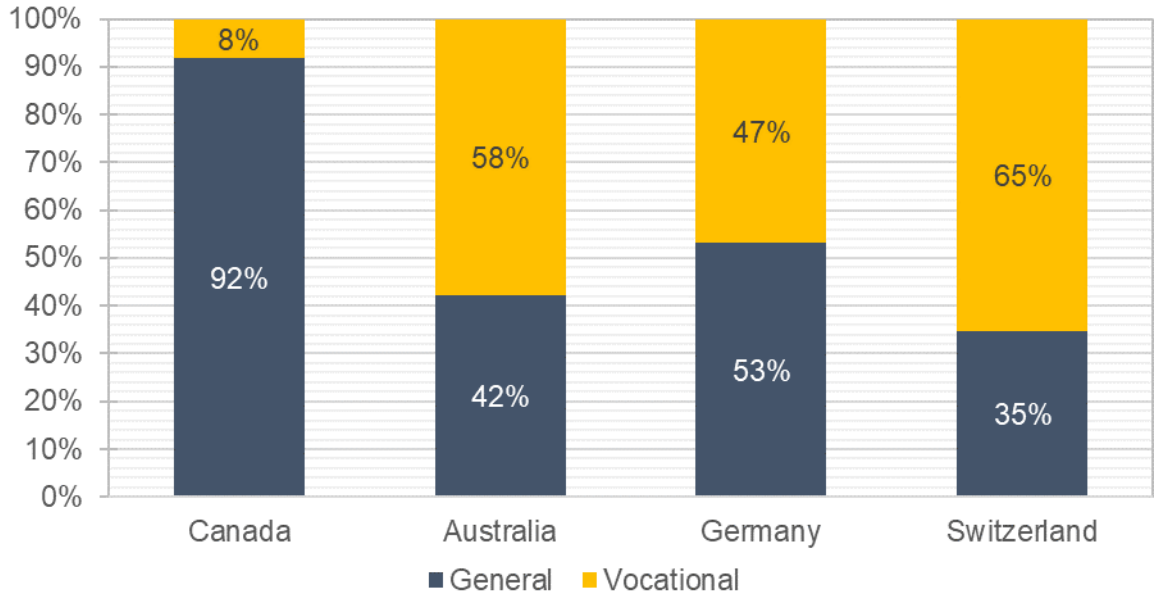

Figure 17: Share of Upper-Secondary Students in General and Vocational Education programming, 2015

Source: OECD, 2017. Vocational education in Australia and Canada includes students who took any vocational education courses.

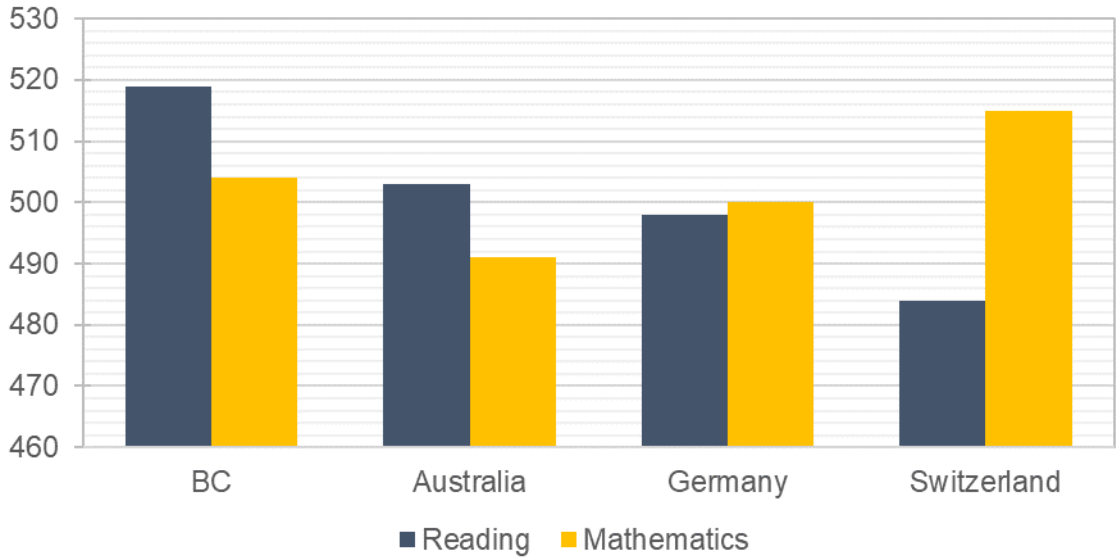

Figure 18: Mean Reading and Math Scores among Upper-Secondary School Students, PISA 2018
Source: O'Grady, et al., 2019, pp. 88, Table B.1.2.; 146. Table B.3.3

Scores in reading and mathematics from the 2018 PISA do not indicate much difference between the countries with vocational learning than those without (Figure 18). BC has the highest score in reading, and the second-highest score in mathematics. However, Switzerland, which has the largest vocational education system of all cases, has the highest score in mathematics. Australia, where students must complete general education as in BC, has the lowest score in math.

PISA data may identify trade-offs between vocational education and equity in literacy and numeracy. The case jurisdictions that had separate vocational and general education pathways may also sort students by socio-economic lines, which negatively impacts students of lower socioeconomic status (OECD, 2019a, p. 58). This effect appears in Germany and Switzerland, where students from poorer households do much more poorly in reading than in wealthier households (Figure 19). In contrast, the educational systems of Canada and Australia are more equitable, with smaller differences in socioeconomic status by PISA score (Figure 19).

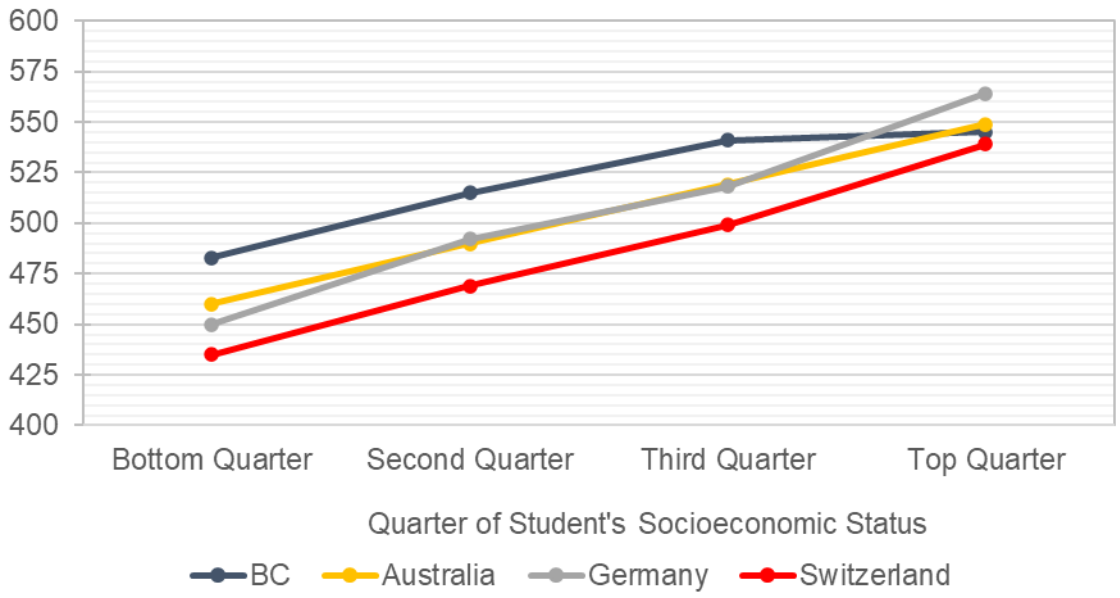

Figure 19: PISA Reading Performance by Student's Socioeconomic Status, 2018

Source: OECD, 2019b, pp. 256, Annex B1, Table II.B2.3.1; 340, Annex B2, Table II.B2.4

Canadian young adults achieved educational credentials at the highest rate of the case studies (Figure 20). In contrast with Canada's excellent rate of secondary school completion, the secondary non-completion rate in Germany indicates that over emphasis on occupational skills in secondary school may lead to less overall educational achievement. Youth who are established in a career before secondary school graduation may not desire to complete general education or enroll in postsecondary. This is, however, not the case in Switzerland, which has the second-highest secondary completion rate and the second-highest postsecondary credential achievement rates of the cases, despite a similar vocational education system to Germany's.

The German and Swiss results in Figure 19 and Figure 20 highlight the potential dangers of strict educational pathways: stratification of population by income and little incentive for post-secondary credential completion. In Figure 19, German and Swiss youth from low-status socioeconomic households perform 100 points below the PISA Reading score of those from high-status backgrounds. These gaps, while present, are smaller in Australia and BC, where all students attend the same general education classes. The German results in Figure 20 also highlight a potential pitfall of the German pathway system: as German students enrolled in certain vocational pathways receive professional certification in upper-secondary, many vocational education students have

little incentive to enroll in postsecondary education or develop competencies in literacy or numeracy (Hoeckel & Schwartz, 2010, p. 15).

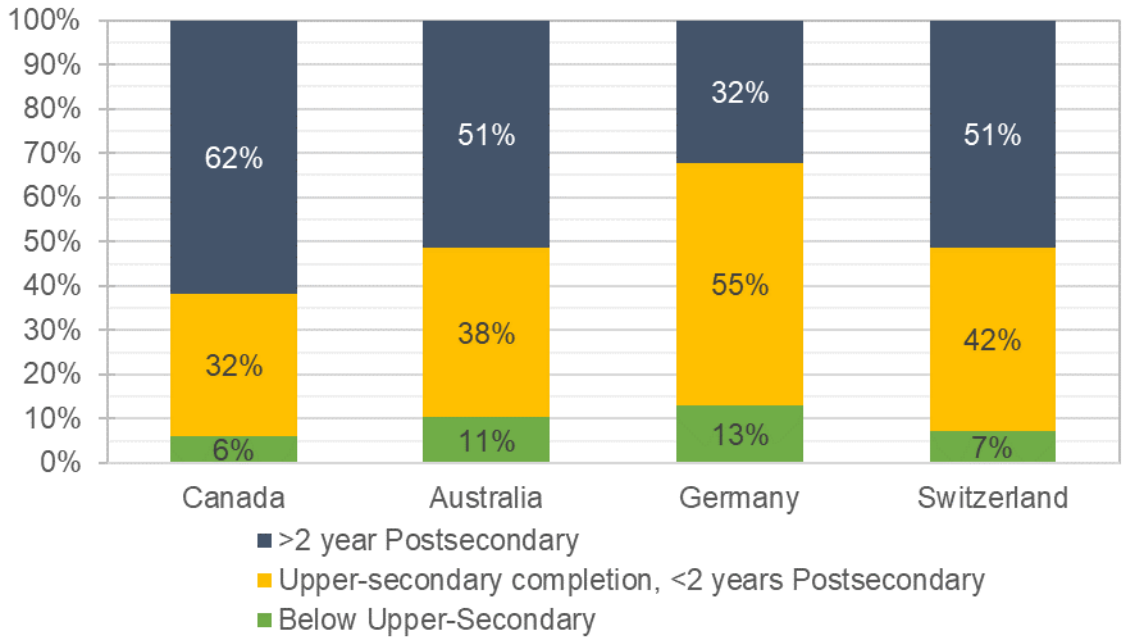

Figure 20: Education Credential completion among 25-34 year-olds in Selected Countries, 2018

Source: OECD, 2020a. This data captures the "those having completed the highest level of education, by age group. This includes all types of programs, although some programs that are counted as "tertiary" in Canada may be included as "secondary" in Australia, Germany, and Switzerland as these places have lower levels of vocational certification. In this figure, the cut-off of two years of postsecondary is defined by the ISCED's definition of "Tertiary". "Upper-secondary completion, <2 years postsecondary includes everything at the ISCED categories 3 and 4, while "> 2 years Postsecondary" includes categories 5-8 and "Below Upper Secondary" includes categories 1 and 2.

5.5.2. Employment Outcomes

While there are minor differences between the case study countries, the employment outcomes must be compared with other countries. All four nations profiled in this study perform strongly relative to other developed countries. Canada, which had the highest 20-24 year-old NEET rate among the case countries, had a NEET rate 1.4 percentage points below the OECD average (OECD, 2020c). Variation in the NEET rate of the 20-24 year-old cohort between the case jurisdictions differs by less than 5 percentage points among the case jurisdictions (Figure 21).

Differences in the 20-24 year-old NEET population may, however, identify the nation where youth are struggling the most at the margin. Among the case countries,

Canada had the highest NEET rate in 2018 (Figure 22). The differences between upper-secondary vocational education systems are clear when looking at how those in their early 20s enroll in education: in Canada, over 50% of 20-24 year-old students were not working, which is reflective of the separation between work and education among upper-secondary students (Figure 22). In Australia, Germany, and Switzerland, more youth are working and studying concurrently. This may be due to higher enrollment in vocational programs, which tend to require work experience as a component of program completion.

Figure 21: Status of 20-24 year-olds in Selected Countries, 2018
Source: OECD, 2020b

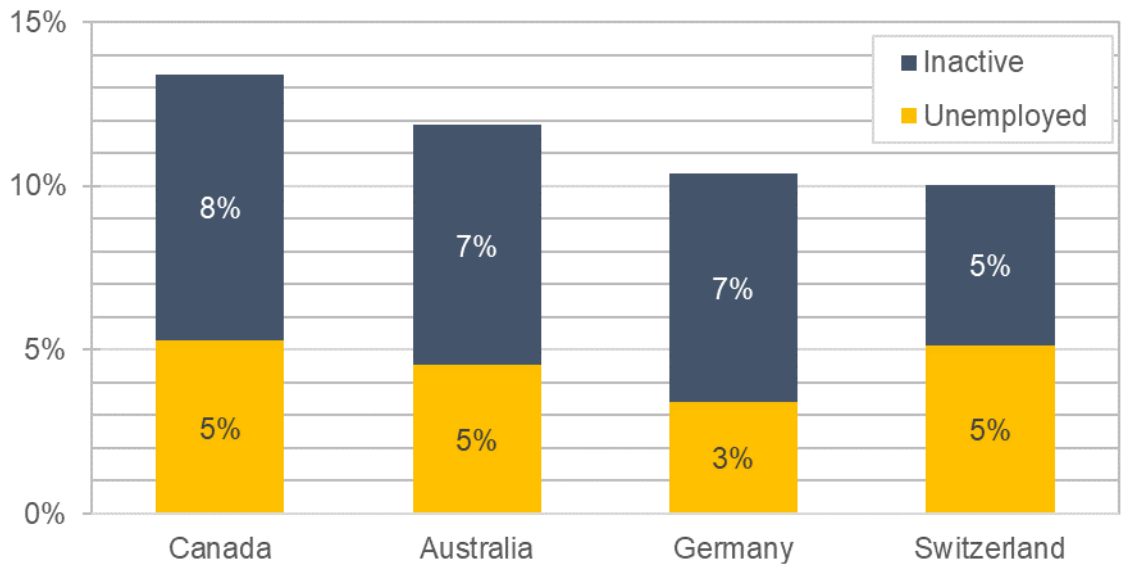

Figure 22: Labour Market Status of NEET 20-24 year-olds in Selected Countries, 2018

Source: OECD, 2020b

5.6. Findings: Case Studies

The case studies highlight two areas where BC's vocational education system differs from Australia, Germany, and Switzerland: program capacity and the regulation of vocational credentials. The different jurisdictions take different approaches to these two areas of vocational education policy.

Youth in BC enroll in and complete postsecondary programs at the highest rate of the case countries. The flexibility of Canadian postsecondary institutions is a major strength of Canada's education system, and it manages to capture a large share of the population (Parkin, 2019). Interventions in the secondary school system must develop, not challenge, these school's strong relationship with postsecondary institutions.

However, the case studies indicate that young adults in BC are less connected to the labour market than their peers than in other countries. This is apparent when looking at the NEET rate and share of students who are employed and in education (Figure 21).While BC has a strong education system that prepares students effectively for postsecondary, countries with strong vocational education systems equip youth with the skills that they need for employment directly after completing their secondary education.

Chapter 6.

Policy Options

This study has identified two major issues in BC's vocational education system: low levels of enrollment in vocational education programming, and a lack of attainable credentials for secondary school students. This chapter offers policy options to address each of these issues.

The policy options are broken into two sections, one each to address the issues limiting BC's vocational education system: low enrollment in vocational programming and a lack of achievable vocational credentials. These two issues are also the responsibility of different provincial ministries: enrollment in vocational-related courses is an issue to be addressed by the BC's Ministry of Education, and the regulation of occupational credentials is the responsibility of the Ministry of Advanced Education, Skills, and Training. There are two policy options presented for each issue (Figure 23).

Issue	Ministry Responsible	Policy Options
Low Enrollment in Vocational Programming	Ministry of Education	Career Programs Grant
		Vocational Dogwood
Lack of Achievable Vocational Credentials in Secondary Schools	Ministry of Advanced Education, Skills, and Training	Basic Vocational Courses
		Expanded Apprenticeships

Figure 23: Vocational Education Issues, Responsibility, and Options

6.1. Vocational Education Enrollment

Increasing enrollment in vocational education in BC would address youth floundering through improved connections between the labour market, non-academic postsecondary education, and students in secondary school. Expanding vocational education is anticipated to improve outcomes for BC's youth by providing linking them to work and postsecondary education options before finishing secondary school.

6.1.1. Option 1: Career Programs Grant

This option establishes an annual $10 million grant, distributed to school districts as a component of the annual operating grants disbursed from the Ministry of Education. This grant would be dispersed to districts that achieve year-over-year improvement to their enrollments in postsecondary-credentialed Career Programs (Career Preparation, Career Technical Centre, and Secondary School Apprenticeship). The Career Programs Grant received by each district would vary annually, based on increases to the number of student enrollments in Career Programs in the previous year, and the type of Career Programs that students enrolled in. Grants would be higher for districts that enroll more students in Career Technical Centre and Apprenticeship programming, as these are the programs that directly connect students with postsecondary and employers.

In 2017/18, school districts reported $5.4 million in operational spending and 9,970 enrollments in Career Programs (Ministry of Education, 2018b; 2019a; 2020b). With an additional $10 million, school districts will expand programs to receive the additional funding. Districts would be incentivized to build long-term institutional connections between schools, employers, and training providers.

6.1.2. Option 2: Vocational Dogwood

This policy option is inspired by the approach of Germany and Switzerland, and establishes a vocational pathway for students at the upper secondary level. The "Vocational Dogwood" would be an alternative secondary school graduating diploma to the existing Dogwood Diploma. There are two components of this policy: introducing a new secondary school graduating credential, the Vocational Dogwood, and sorting students into Vocational and General Dogwood paths after lower-secondary.

After Grade 9, students would be evaluated for academic ability, and divided by the Ministry of Education into vocational and academic pathways. Students enrolled in the Vocational Dogwood for upper-secondary would enroll in a postsecondary vocational program in Grade 10, and would be exempted from the Dogwood requirements in Science, Social Studies, Arts, and Physical and Health Education (Ministry of Education, n.d.-d). Completion of their postsecondary program and required secondary school

courses (Career-Life Education, Math, and Language Arts) would earn students the Vocational Dogwood diploma.

6.2. Vocational Education Regulation

The second gap in BC's vocational education system is a lack of achievable vocational credentials for secondary school students. Australia, Germany, and Switzerland, all have secondary school systems that enable students to complete an occupational credential prior to graduation (Chapter 5). In BC, these opportunities are limited to a few fields. Students in vocational education in secondary schools are likely to only obtain a few credits towards a credential that requires years of postsecondary to complete after graduation.

6.2.1. Option 3: Basic Vocational Courses

This policy option is based on the certification program of the Australian Qualifications Framework, which establishes basic credentials that students may complete in under a year (Australian Skills Quality Authority, 2013, pp. 28-31). These credentials a foundation for further vocational and recognition of general occupational skills recognized by employers across the country.

Under this policy option, BC would establish basic courses on occupational skills used across industries. For example, a basic course in business would develop clerical, communications, and software skills, while a basic construction course would focus on skills, like drafting and power tool operation, used in many trades. The Ministry of Advanced Education, Skills and Training would standardize course content across the province, and recognize program completion with a credential that provides accelerated admission into occupation-specific postsecondary programs.

6.2.2. Option 4: Expanding Apprenticeships

To expand the existing apprenticeship program, BC would adopt an aggressive engagement strategy to expand the occupations with apprenticeship certification recognized by the ITA. As the province's standardized forum for the recognition of apprenticeship learning arrangements, the government can increase the number of

pathways into occupations through increasing the number of fields youth can move into through an apprenticeship. Currently, apprenticeship training is limited to occupations that are stereotypically trades: construction, mechanics, and food-service (Industry Training Authority, n.d.-e). This policy option borrows from other countries, which recognize apprenticeship training in a wider variety of occupations (Chapter 5).

Expanding apprenticeships requires the ITA to engage with new private partners and work with postsecondary institutions to establish programs in new industries. More apprenticeships would provide secondary school students more opportunities to train in a profession prior to secondary school completion.

Chapter 7.

Evaluation Criteria

Policy options considered here will be analyzed by their impact on BC's current education system according to five different criteria. The option's ability to transition students from secondary school into postsecondary education or the labour market is the most important criterion. Options are also judged on their ability to reach youth with particularly poor educational and employment outcomes, impact on the delivery of literacy and numeracy programming, political agreeableness to key stakeholders, and ease of implementation. Options are rated by their expected positive or negative impact to the status quo along a continuum of Strong Negative – Negative – No Impact – Positive – Strong Positive. Options are correspondently rated from -2 (Strong Negative) to +2 (Strong Positive).

Criterion	Definition	Measurement
Effectiveness	Improved Student Transitions.	Estimated change in the 20-24 year-old NEET rate.
Geographic Equity	Reach to students in remote communities.	Ability to be successful in small, remote school districts.
Educational Development	Minimized impact on literacy and numeracy.	Impact on youth literacy and numeracy scores.
Community Acceptance	Political acceptability by other actors.	Intensity of support or opposition from key stakeholders.
Administrative Ease	Ease of implementation and ongoing operational expense.	Anticipated costs of change from the current structure of BC's education system, and estimated additional operating spending impact.

Figure 24: Policy Analysis Criteria and Measures

7.1. Effectiveness

Policy options are heavily judged on their ability to reduce youth floundering. Options that connect secondary school students to postsecondary education and the labour market rate highly under this criterion. Effectiveness is measured by the option's expected ability to change the 20-24 NEET rate in BC. Positive scores lower the NEET rate, while an option with a negative score would raise it.

7.2. Geographic Equity

The equity criterion is a subjective evaluation of the policy's ability to be implemented in small communities with few major employers. A positive score on this criterion would be a program that is easy to implement in BC's remote communities. The subpopulation that experiences the poorest transitions from school into work is Indigenous British Columbians in isolated regions (Chapter 3). This option is not focused only on Indigenous youth for two reasons. First, the province does not have jurisdiction over the programming in on-reserve schools. Second, the government of BC has already incorporated additional funding for Indigenous students into its operating grants for school districts – it is not the intention of this capstone to propose a policy that directly overlaps with that existing mechanism.

Chapters 3 and 4 found that youth in remote regions of BC without a booming natural resource economy are less likely to enroll in postsecondary education or find employment than those from more populated regions. This criterion seeks to ensure that the policy options may be implemented in remote regions where schools have less access to postsecondary education and employers.

7.3. Educational Development

This criterion considers a potential trade-off between vocational education and high-quality general education. This criterion considers how the option impacts the school system's ability to deliver high-quality literacy and numeracy education to students. A positive score on this criterion would improve secondary school student's expected literacy and numeracy scores, while a negative score would indicate worse scores.

The options for changes to the regulatory environment are not evaluated by this criterion, as both options have no direct impact on general education in secondary schools.

7.4. Community Acceptance

Changes to the education system involve alterations to the status quo for private actors. This criterion analyzes the support or opposition expected for the option from parents, students, employers, teachers, school boards, and postsecondary institutions. A subjective analysis of the stakeholders, based on Power v. Influence grids (Appendix C), is used to measure a policy option's anticipated level of acceptance.

7.5. Administrative Ease

This criterion evaluates the difficulty the government will have in implementing the policy. There are two components to this: the amount of expense and administrative adjustment undertaken by the government in policy implementation, and the annual incremental cost of the option after adoption. Measurement of this criterion is a subjective ranking based on an evaluation for implementation and consideration of the costs.

Chapter 8.

Analysis

8.1. Vocational Education Programming (Options 1 and 2)

8.1.1. Effectiveness

The Vocational Dogwood rates highly in effectiveness compared to the status quo, because it directly targets youth expected to flounder in early adulthood. This option mandates that the school system strive to transition students onto the vocational pathway into employment. As seen in Germany and Switzerland, this approach works well at directly connecting students with employment beyond secondary school.

The Career Programs Grant relies on competition for funding between school districts to promote program creation within the existing Career Programs framework. Increased capacity in Career Programs is already demanded by students: Career Program administrators have identified a lack of program capacity, rather than a lack of student demand, as the primary reason for low enrollment (Leber, 2019). Existing Career Programs provide students the flexibility to study and work in areas of interest while completing their Dogwood Diploma. Program administrators have noticed that the current suite of Career Programs assist students who are not very interested in school on the path to a Dogwood (Blake, 2019). The Career Programs Grant is designed to incentivize school districts to meet this demand, improving the school-to-work transitions of the students who choose vocational education.

This option would have a moderate level of improvement over the status quo, as it relies on students and school districts to choose Career Programs, rather than directly funneling students into vocational education. Expanding Career Programs will reduce NEET rate among young adults, but not to the same extent as the Vocational Dogwood.

8.1.2. Geographic Equity

The Career Programs Grant outperforms the Vocational Dogwood on the policy's expected impact on geographically remote school districts.

The Career Programs Grant offers small school districts the opportunity to tailor programs for the local employers and educators they have access to. BC's Career Programs are designed to build bridges to employers and educators that are realistic for the community they are in. This is already happening in existing programs: the Career Technical Centre in Nanaimo-Ladysmith is working with Nicola Valley Institute of Technology to build curricula that connect to Indigenous students (Beeston, 2019).

This is less likely to occur with the Vocational Dogwood due to the lack of access to postsecondary institutions BC's remote areas. Small districts will not be able to offer as large a range of programming within the remote communities: students must travel to other areas to complete their education or instructors will need to be flown in to teach vocational courses. These practices impose significant costs on students and districts. What is more likely is that the Vocational Dogwood is not fully implemented in remote school districts, which means that the option will have little impact for this criterion.

8.1.3. Educational Development

The Vocational Dogwood is expected to have a negative impact on student's literacy and numeracy. The Career Programs Grant is not expected to have a major impact on the status quo.

Students enrolled in the Vocational Dogwood pathway must complete basic numeracy and literacy courses and assessments, but the general skills developed in other subjects, such as math in chemistry or language in social studies, will be lost. As students would also graduate with postsecondary certification in their field, they would have little incentive to achieve high scores in non-vocational programs.

This problem is avoided if the change is limited to an expansion of the current Career Programs under the Career Programs Grant. Students in Career Programs would still have an incentive to achieve good marks in in other classes, because of graduation requirements of the Dogwood Diploma, and due to the entry requirements of most postsecondary programs they may still be targeting.

8.1.4. Community Acceptance

The analysis of community acceptance for these options is based on a salience-power-support chart analysis, depicted in Appendix C. There are four stakeholders considered in this analysis: parents, industry, school boards, and unionized teachers. The Vocational Dogwood option scores very poorly on community acceptance, while the Career Programs Grant scores slightly positively.

The Vocational Dogwood will encounter major stakeholder opposition from the actors required to support the option's implementation: school boards and teachers. Altering program requirements is an issue of high salience for both, as it reflects a large change from the status quo. Under the Vocational Dogwood, school boards must accept changes to graduation requirements that require additional resources, and courses that students are currently taking from members of the BC Teacher's Federation will be taught by industry professionals and postsecondary instructors. However, the Vocational Dogwood would not be as important to them, nor do they hold as much power over its success as the other stakeholders.

The Career Programs Grant, in contrast, is expected to achieve the support of the most powerful stakeholder: school boards. As increased funding that is only related to Career Program enrollment, the grant is an opportunity for school districts that expand Career Programming, without imposing new administrative requirements.

Parents hold a large degree of political power over school boards, but little direct power over program administration. Parents would strongly oppose the Vocational Dogwood, as it would result in early sorting of many children into an occupational stream, which is generally maligned in Canada. This is a major difference from the systems in Germany and Switzerland, where blue-collar occupations are strongly supported by the general public (Field, Hoeckel, Kis, & Kuczera, 2014, p. 34, fig.1.4).

Parents are expected to support the introduction of a Career Programs Grant. The grant only matters to Career Program's supporters: it is a small enough change to the education system that is not likely to mobilize a large group of parents.

The Career Programs Grant is likely to win wider acceptance for introduction than the Vocational Dogwood. Getting school boards on-side with the policy change is

crucial: as the implementers of whatever policy is being enacted, their support is necessary. This is the primary area where the Career Grant scores higher than the Vocational Dogwood, although the expected support it is likely to get from parents is also important.

8.1.5. Administrative Ease

There are two components to the cost criterion: the scale of changes that must be implemented, along with a consideration of the programs' ongoing operational costs. The Vocational Dogwood is expected to be expensive to implement, and difficult administratively. In contrast, the Career Programs Grant relies on prompting already established administrative units to compete for funding, encouraging innovation and reducing the administrative burden on the Ministry.

The Vocational Dogwood is expected to have higher implementation and operational costs than the Career Programs Grant. The Vocational Dogwood would require a large investment in postsecondary placements for secondary school students. Duplication in the school system would also be introduced by the introduction of separate graduating pathways for vocation-track students, requiring school districts to adjust to the streaming process introduced by the Ministry. Districts will need to change their staff to meet the needs of those in the Vocational Dogwood and academic Dogwood. The overall implications for the Ministry of Education here not clear, though the adoption of streaming and the Vocational Dogwood would impose major administrative costs on school districts. These costs will require significant additional funding from the Ministry of Education, far more than the $10,000,000 proposed in the Career Programs Grant.

The Career Programs Grant provides an incentive for school districts to reallocate discretionary funding. The Career Programs Grant encourages efficiency in new program creation, because districts will receive the funding for increased enrollment, not increased costs. The size of the Grant is not large enough to encourage school districts to make enrollment in Career Programs the default option for students, but it is anticipated to spur program growth to meet the demands of students. Compared with the Vocational Dogwood, the Career Programs Grant has a low impact on the budget and administrative capacity of BC's Ministry of Education.

8.2. Vocational Education Regulation

8.2.1. Effectiveness

Expansion of the province's apprenticeship programs will positively impact student transitions into the labour market. Apprenticeship leverages the advantages of mentorship learning (Chapter 4). Expansion of BC's apprenticeship programming across industries, as seen in Switzerland and Germany, gives youth more options for vocational learning – improving outcomes for those who do not want to enter academic postsecondary.

Basic Vocational Courses are also expected to positively impact student transitions. These courses link to postsecondary instruction, but there is no guarantee that students pursue programming in this area after program completion. Courses are expected to provide some improvement in the NEET rate over the status quo. Findings from Australia suggest that state recognition of basic skills improves employment outcomes, and that many who complete basic courses return to postsecondary education years later to build on the basic skills they acquired at that point in time (Department of the Prime Minister and Cabinet, 2019, p. 138).

However, unlike apprenticeships, Basic Vocational Courses are a classroom experience where students do not gain direct work experience. As Basic Vocational Courses would not provide a direct link to work that apprenticeships do, they are anticipated to only moderately improve student transitions.

8.2.2. Geographic Equity

The expansion of apprenticeship is anticipated to have a more positive impact on remote communities than the introduction of Basic Vocational Courses. Apprenticeship Expansion directly connects youth with a local employment, whereas Basic Vocational Courses provide students with basic knowledge, not a direct connection to work.

This trade-off is stronger in rural communities, where an early connection into the labour market is more elusive than in cities and crucial for future development (Campolieti, Fang, & Gunderson, 2010, p. 48). For example, if more occupations in regional fisheries and forestry companies (including in business and administrative

positions) were to include apprenticeship, youth in remote communities may be able to transition into careers in their area with skills directly relevant to those occupations.

This is less relevant for Basic Vocational Courses. Credentials are more beneficial for youth when there are many potential employers who will recognize the credential, but may not recognize employment experience at another firm. Basic courses are also more beneficial for youth who live near postsecondary institutions at which the credentials earned in basic courses may be upgraded into a specialized vocational program. This still represents improvement on the status quo, as a credit beyond the Dogwood would be achievable in smaller communities, but it is not as effective as apprenticeship expansion.

8.2.3. Educational Development

This criterion is irrelevant to these options. Neither of them represents a direct change to secondary school education, instead a shift in how occupational credentials are recognized. There is no trade-off anticipated between either policy option and the ability of secondary schools to provide high-quality general education to all students.

8.2.4. Community Acceptance

In contrast with the options presented for changing enrollment, altering the regulation of vocational education is not anticipated to be as salient for the stakeholders. For both, only a single stakeholder with power is expected to care enough about the shift in regulation to have a major impact on the potential outcome. For the Vocational Educational Courses, that impact is expected to be negative to the government, while it is expected to be positive for Expanding Apprenticeships.

For the establishment of Vocational Educational Courses, the teacher's union is anticipated to be in outspoken opposition. Bringing non-union staff into the classroom represents a major challenge to teachers' current power in over the classroom.

Expanding Apprenticeships is expected to galvanize support from its key stakeholder: employers. This issue would be of low salience to teachers and school boards, and parents would have little control over the program's design. This makes for

a win-win for both government and employers: government supports industries, while industries open another pathway for future employees.

8.2.5. Administrative Ease

Expanding BC's apprenticeship system are less complex than the introduction of Basic Vocational Courses. BC already has an apprenticeship regulatory agency, which has committees that engage with industry representatives. Increasing apprenticeships would increase the existing status quo. In contrast, introducing Basic Vocational Courses is a dramatic shift from BC's existing postsecondary credential structure. It would also require greater engagement with postsecondary and secondary schools to ensure implementation, and funding to establish program spaces.

The operational costs of these programs are unclear. An issue with the basic courses option is that it introduces another layer of educational credentials that overlap secondary and post-secondary schools, risking duplication of programs and costs. This is less likely with expanded apprenticeships: while there are costs to the oversight of more apprentices, there is no risk of program duplication.

Policy Options for Changing Secondary-School Vocational Education Programming:		
Criterion	Vocational Dogwood (-2)	**Career Programs Grant (3)**
Effectiveness	Strong Positive (+2)	Positive (+1)
Equity	No Change (0)	Positive (+1)
Development	Negative (-1)	No Change (0)
Community Acceptance	Negative (-1)	Strong Positive (+2)
Administrative Ease	Strong Negative (-2)	Negative (-1)
Policy Options for Changing the Regulation of Occupational Training:		
Criterion	**Expanded Apprenticeships (+4)**	Basic Vocational Courses (-1)
Effectiveness	Strong Positive (+2)	Positive (+1)
Equity	Strong Positive (+2)	Positive (+1)
Development	Not rated	Not rated
Community Acceptance	Positive (+1)	Negative (-1)
Administrative Ease	Negative (-1)	Strong Negative (-2)

Figure 25: Policy Evaluation Matrix

Chapter 9.

Recommendations

I recommend that BC increase the size of career program offerings through the Career Programs Grant. This policy is best designed to support the institution of local education administration, the school district. The Grant rewards school districts for creating connections within their communities, while providing them with further incentives to connect students to different pieces of post-graduation life.

I also recommend that BC engage with industry associations to expand the number of occupations certified by the Industry Training Association, for the purpose of increasing the number apprenticeship opportunities available to youth. Apprenticeships provide youth with a stable foundation of experience that leads to career success.

These two options would be easy to implement. The Career Programs Grant could be included as a component of the government's current review of education funding. As school districts decide how to reorient programming to a renewed funding formula, incentivizing Career Program development should be a priority for the government of BC.

These options are oriented to improve student transitions from secondary school into the labour market through increased cooperation between schools and external partners, and reduced the stigma surrounding work-based education. These policy options are not massive changes to the status quo, but develop the relationships that encourage students, parents, and educators to plot out paths for youth success.

Chapter 10.

Conclusion

This study demonstrates that tens of thousands of BC's youth struggle to transition from secondary school into work. Improved vocational education programming, as observed in other countries, presents the possibility of improving the school-to-work transition for this population.

There are two gaps in BC's current vocational education system that need to be addressed. There is little vocational education programming offered in secondary schools, and there are few occupations within which secondary students may start a career.

The first gap is best addressed by incentivizing school districts to expand vocational education within the current program's framework. The provincial government can, with a small amount of funding, encourage school districts to create programs that engage students in vocational postsecondary education and career-focused work that are applicable in the local area.

The second gap may be addressed by encouraging employers to engage more with the education system. Expanding the Industry Training Authority's regulatory mandate beyond its traditional trades-oriented occupations will make apprenticeships a viable option for more youth.

I found that the two recommended options were both improvements on the status quo, but that the other options considered would not have been worth implementing. Introducing a vocational stream to BC's secondary school system would assist student transitions into the workplace. But, it is financially and politically costly, and negatively impacts BC students' strong general education scores. Rewriting the vocational education curriculum to focus on a competency-based approach would result in stronger links between secondary and postsecondary education, but would be difficult to implement across institutions. The recommended options are small actions that the government could implement with ease. They allow school districts and industries to experiment with the programs that will work in their area.

This study was limited in scope. While I addressed programs governed by the "Work Experience Order", changes to other programs were not considered. This analysis also did not address the impact of labour regulations on youth entry into the labour market.

BC has a framework for vocational education that could serve young British Columbians well, if improved connections with employers and non-academic postsecondary programs are prioritized by school districts. The education system requires refinement to encourage more youth to engage in education aimed at establishing a career. This analysis concludes that small incentives to the system will encourage school districts to create programming that embeds schools in their communities and educates students who are better prepared for entry into the labour force.

References

Abbotsford Career Programs. (2020). Programs. Abbotsford School District, Abbotsford Career Programs. Retrieved from https://careers.abbyschools.ca/programs

Alvarez-Galvan, J.-L., Fazekas, M., Kis, V., Kuczera, M., & Musset, P. (2014). Skills Beyond School: Synthesis Report. OECD, OECD Reviews of Vocational Education and Training. Paris: OECD Publishing. doi:10.1787/9789264214682-en

Australian Skills Quality Authority. (2013). Australian Skills Qualifications Framework. Government of Australia, Australian Skills Quality Authority. Australian Skills Quality Authority. Australian Government. Retrieved from www.aqf.edu.au/sites/aqf/files/aqf-2nd-edition-january-2013.pdf

Australian Skills Quality Authority. (2018). Quality in the VET system - a shared responsibility. Government of Australia, Australian Skills Quality Authority. Retrieved from https://www.asqa.gov.au/sites/default/files/quality_in_the_vet_system_-_a_shared_responsibility.pdf

Australian Skills Quality Authority. (n.d.-a). About the Standards for VET Accredited Courses. Government of Australia, Australian Skills Quality Authority. Retrieved from https://www.asqa.gov.au/standards-vac/about

Australian Skills Quality Authority. (n.d.-b). VET Sector Overview. Retrieved from https://www.asqa.gov.au/about/vet-sector

Autor, D. (2015, Summer). Why Are There Still So Many Jobs? The History and Future of Workplace Automation. Journal of Economic Perspectives, 29(3).

Autor, D., Dorn, D., & Hanson, G. (2018, January). When Work Disappears: Manufacturing Decline and the Falling Marriage Market Value of Young Men. American Economic Review: Insights, 1(2), 161-178.

BC Stats. (2014). Summary of Lifetime Earnings. Government of British Columbia, BC Stats. Retrieved from https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/data-research/lifetime-earnings.pdf

Beeston, D. (2019, August). Personal Correspondence.

Blake, K. (2019, August). Personal Correspondence.

Brigham, S., & Taylor, A. (2006). Youth Apprenticeship Programs for Aboriginal Youth in Canada: Smoothing the Path From School to Work? Canadian Journal of Native Education, 29(2), 165-181.

Brunet, S. (2018). The transition from school to work - the NEET (not in employment, education or training) indicator for 25- to 29-year-old women and men in Canada. Government of Canada, Statistics Canada, Ottawa, Ontario. Retrieved from https://www150.statcan.gc.ca/pub/81-599-x/81-599-x2018013-eng.pdf

Brunet, S. (2019). The transition from school to work: the NEET (not in employment, education or training) indicator for 20- to 24-year-olds in Canada. Government of Canada, Statistics Canada, Ottawa, Ontario. Retrieved from https://www150.statcan.gc.ca/pub/81-599-x/81-599-x2019001-eng.pdf

Brynner, J., & Parsons, S. (2002). Social Exclusion and the Transition from School to Work: The Case of Young People Not in Education, Employment, or Training (NEET). Journal of Vocational Behaviour, 60, 289-309. doi:10.1006/jvbe.2001.1868

Burnaby School District 41. (n.d.). Career Education. Retrieved from https://burnabyschools.ca/careereducation/

Campolieti, M., Fang, T., & Gunderson, M. (2010). Labour Market Outcomes and Skill Acquisition of High-School Dropouts. Journal of Labor Research, 31(1), 39-52.

Career Technical Centre, School District 68. (n.d.). Dental Assistant. Retrieved from https://www.ctc-careerpaths.ca/programs/careers-certificate-program/program-list/dental-assistant/

Cass, O. (2018). The Once and Future Worker: A Vision for the Renewal of Work in America (1st ed.). New York, New York: Encounter Books.

Chetty, R., Friedman, J., Hendren, N., Jones, M., & Porter, S. (2018). The Opportunity Atlas: Mapping the Childhood Roots of Social Mobility. National Bureau of Economic Research. Retrieved from www.nber.org/papers/w25147

College of New Caledonia. (2020). Career Technical Centre. College of New Caledonia. Retrieved from https://cnc.bc.ca/programs-courses/programs/ctc

Corak, M. (2017). Divided Landscapes of Economic Opportunity: The Canadian Geography of Intergenerational Income Mobility. University of Chicago, Paper Number 2017-043, The Human Capital and Economic Opportunity Global Working Group, Chicago, Illinois. Retrieved from https://hceconomics.uchicago.edu/research/working-paper/divided-landscapes-economic-opportunity-canadian-geography-intergenerational

Department of Education, Skills, and Employment. (n.d.). AQF qualifications. Retrieved from https://www.aqf.edu.au/aqf-qualifications

Department of Employment, Skills, Small and Family Business. (n.d.). Industries. Retrieved from https://www.myskills.gov.au/industries/

Department of the Prime Minister and Cabinet. (2019). Strengthening Skills: Expert Review of Australia's Vocational Education and Training System. Government of Australia, Department of the Prime Minister and Cabinet. Retrieved from https://www.pmc.gov.au/sites/default/files/publications/strengthening-skills-independent-review-australia-vets_0.pdf

Diplomatic Academy. (n.d.). The Australian Education System: Foundation Level. Government of Australia, Department of Foreign Affairs and Trade. Retrieved from https://dfat.gov.au/aid/topics/investment-priorities/education-health/education/Documents/australian-education-system-foundation.pdf

Earl Marriott Secondary Career Programs. (n.d.). Career Education Department, Earl Marriott Secondary, Surrey Schools. Retrieved from www.surreyschools.ca/schools/earlmarriott/Departments/Career/Documents/Co-op%20Summary%20Brochure.pdf

Education Planner BC. (2020). Credentials. Retrieved from Education Planner BC: https://www.educationplannerbc.ca/plan/start/credentials

Federal Institute for Vocational Education and Training. (n.d.). Dual study programmes in the German VET system. Government of Germany, Federal Institute for Vocational Education and Training. Retrieved from https://www.bibb.de/en/77205.php

Federal Ministry of Education and Research. (n.d.). The German Vocational Education System. Retrieved from https://www.bmbf.de/en/the-german-vocational-training-system-2129.html

Ferrall, C. (1997, 4). Unemployment Insurance Eligibility and the School-to-Work Transition in Canada and the United States. Journal of Business & Economic Statistics, 15(2), 115-129.

Field, S., Hoeckel, K., Justesen, T., & Kim, M. (n.d.). Learning for Jobs OECD Reviews of Vocational Education and Training: Australia.

Field, S., Hoeckel, K., Kis, V., & Kuczera, M. (2010). Learning for Jobs. OECD. Paris: OECD Publishing.

Finnie, R., & Meng, R. (2006). The Importance of Functional Literacy: Reading and Math Skills and Labour Market Outcomes of High School Drop-outs. Statistics Canada, Government of Canada, Analytical Studies Branch Research Paper Series, Ottawa, Ontario. Retrieved from https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2006275-eng.pdf

Frenette, M. (2014). The Long-term Labour Market Premiums Associated with a Terminal High School Diploma. Government of Canada, Analytical Studies Branch Research Paper Series, Statistics Canada, Ottawa, Ontario. Retrieved from https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2014354-eng.pdf

Green, J., & Rogers, B. (1997). Roots and Wings Community Mentoring: An Evaluation of the Manchester Pilot. Mentoring & Tutoring: Partnership in Learning, 5(2). doi:10.1080/0968465970050203

Gunderson, M., & Krashinsky, H. (2015, 11). Returns to Apprenticeship based on the 2006 Canadian Census. ILR Review, 68(5), 1078-1101. doi:10.1177/0019793915591990

Gunderson, M., & Krashinsky, H. (2016, 9). Apprenticeship in Canada: An Increasingly Viable Pathway? Challenge, 59(5), 405-421.

Heslop, J. (2010). Research Results from the Student Transitions Project: Post-secondary Credential Completion of BC Grade 12 Graduates. Government of British Columbia, Student Transitions Project Secretariat, Ministry of Advanced Education, Skills, and Training. Retrieved from https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/data-research/stp/credential_completion_newsletter_formatted_2010-10-21.pdf

Heslop, J. (2019). STP Research Results: Student Transitions and Enrolment Trends. Government of British Columbia, Student Transitions Project Secretariat, Ministry of Advanced Education, Skills, and Training. Retrieved from https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/data-research/stp/stp_research_results.pdf

Higham, J., & Farnsworth, V. (2012, September). What makes a course vocational? School-based work-related programmes in Canada in dialogue with a community of practice. Journal of Education and Work, 25(4), 443-471.

Hippach-Schnieder, U., & Huismann, A. (2016). Vocational Education and Training in Europe: Germany. Federal Insitute for Vocational Education and Training. Cedefop ReferNet VET in Europe reports. Retrieved from http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_DE.pdf

Hoeckel, K., & Schwartz, R. (2010). A Learning for Jobs Review of Germany. OECD. Paris: OECD Publishing. Retrieved from https://www.oecd.org/germany/45668296.pdf

Hoeckel, K., Field, S., & Norton, G. (2009). A Learning for Jobs Review of Switzerland. OECD. Paris: OECD Publishing. Retrieved from http://www.oecd.org/education/skills-beyond-school/Learning%20for%20Jobs%20book.pdf

Hoeckel, K., Field, S., Justesen, T., & Moonhee, K. (2008). Learning for Jobs OECD Reviews of Vocational Education and Training: Australia. OECD. Paris: OECD Publishing. Retrieved from https://www.oecd.org/australia/41631383.pdf

Industry Training Authority. (2017a). Youth Explore the Trades Sampler: Program Guide. Government of British Columbia, Industry Training Authority, Ministry of Advanced Education, Skills, and Training. Retrieved from http://www.youth.itabc.ca/wp-content/uploads/2017/11/ITA-Youth-Explore-Trades-Sampler-ProgramGuide.pdf

Industry Training Authority. (2017b). Youth Train in Trades: Program Guide. Government of British Columbia, Industry Training Authority, Ministry of Advanced Education, Skills, and Training. Retrieved from http://www.youth.itabc.ca/wp-content/uploads/2017/09/Train-Guide-March-2017-1.pdf

Industry Training Authority. (2018a). Youth Apprentice and Sponsor Registration Form. Government of British Columbia, Industry Training Authority, Ministry of Advanced Education, Skills, and Development. Retrieved from https://www.itabc.ca/sites/default/files/docs/discover/Youth/Youth-Apprentice-and-Sponsor-Registration-Form-June-2018.pdf

Industry Training Authority. (2018b). Youth Programs by the Numbers: 2017/2018 School Year. Government of British Columbia, Industry Training Authority, Ministry of Advanced Education, Skills, and Training. Retrieved from https://www.itabc.ca/sites/default/files/docs/about-ita/corporate-reports/Youth%20Programs%20by%20the%20numbers%20-2017_18%20FINAL.PDF

Industry Training Authority. (2018c). ITA Youth Program Operations Guide 2018. Government of British Columbia, Industry Training Authority, Ministry of Advanced Education, Skills, and Training. Retrieved from http://youth.itabc.ca/wp-content/uploads/2017/12/Youth-Program-Operations-Guide-Sept-2018.-docx.pdf

Industry Training Authority. (n.d.-a). Discover Grant Application. Retrieved from http://youth.itabc.ca/wp-content/uploads/2018/06/Youth-Discover-Programs-Applications-2019.pdf

Industry Training Authority. (n.d.-b). ITA | Youth Explore. Government of British Columbia, Industry Training Authority, Ministry of Advanced Education, Skills, and Training. Retrieved from http://youth.itabc.ca/programs/explore/

Industry Training Authority. (n.d.-c). ITA | Youth Train. Government of British Columbia, Industry Training Authority, Ministry of Advanced Education, Skills and Training. Retrieved from http://youth.itabc.ca/programs/train/

Industry Training Authority. (n.d.-d). ITA | Youth Work. Government of British Columbia, Industry Training Authority, Ministry of Advanced Education, Skills and Training. Retrieved from http://youth.itabc.ca/programs/work/

Industry Training Authority. (n.d.-e). Trades Programs. Retrieved from https://www.itabc.ca/discover-apprenticeship-programs/search-programs

Jacob, M., & Weiss, F. (2010, 2 10). From higher education to work: patterns of labor market entry in Germany and the US. Higher Education, 60(5), 529-524. doi:10.1007/s10734-010-9313-y

Kostyshyna, C., & Luu, C. (2019). The Size and Characteristics of Informal ("Gig") Work in Canada. Government of Canada, Canadian Economic Analysis Department, Ottawa, Ontario. Retrieved from https://www.bankofcanada.ca/wp-content/uploads/2019/02/san2019-6.pdf

LaRochelle-Côté, S. (2013). Employment instability among younger workers. Government of Canada, Statistics Canada, Ottawa, Ontario. Retrieved from https://www150.statcan.gc.ca/n1/en/pub/75-004-m/75-004-m2013001-eng.pdf?st=RZyrUPFc

Leber, J. (2019, August). Personal Correspondence.

Lechner, C., Tomasik, M., & Silbereisen, R. (2016, 8 9). Preparing for Uncertain Careers: How youth deal with growing occupational uncertainties before the education-to-work transition. Journal of Vocational Behaviour, 2016, 90-101. doi:10.1016/j.jvb.2016.08.002

Liu, J., Ravanera, Z., Wang, J., & Roderic, B. (2017). Vulnerable Young Adults' Entry into Full-time Work: An Analysis Using the Canadian Study of Labour and Income Dynamics. Population Change and Lifecourse Strategic Knowledge Cluster Discussion Paper Series, 4(1), 1-20. Retrieved from https://ir.lib.uwo.ca/pclc/vol4/iss1/

Marshall, K. (2012). Youth neither employed nor enrolled. Government of Canada, Statistics Canada, Ottawa, Ontario. Retrieved from https://www150.statcan.gc.ca/n1/en/pub/75-001-x/2012002/article/11675-eng.pdf?st=99aXNMy7

Ministry of Education. (2016). British Columbia's Education Program. Government of British Columbia, Ministry of Education. Retrieved from https://www2.gov.bc.ca/assets/gov/education/administration/kindergarten-to-grade-12/diverse-student-needs/educationwelcomeletter_jan2016_english_final.pdf

Ministry of Education. (2018a). Earning Credit through Equivalency, Challenge, External Credentials, Post Secondary Credit and Independent Directed Studies. Government of British Columbia, Ministry of Education. Retrieved from https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/legislation-policy/public-schools/earning-credit-through-equivalency-challenge-external-credentials-post-secondary-credit-and-independent-directed-studies

Ministry of Education. (2018b). Enrolments in Student Programs (dataset). Government of British Columbia, Ministry of Education. Retrieved from https://catalogue.data.gov.bc.ca/dataset/enrolments-in-student-programs

Ministry of Education. (2018c). Enrolments in Student Programs definitions. Government of British Columbia, Ministry of Education. Retrieved from https://catalogue.data.gov.bc.ca/dataset/enrolments-in-student-programs/resource/1223e409-09bb-4ccf-a48d-6f5e3554371c

Ministry of Education. (2019a). 2018/19 BC School District Revenue and Expenditure Tables. Table 1: FTE Funded Enrolment: 2013/14 to 2018/19 by District; Table 23: Actual Operating Expenses by Function and District (dataset) (Tables). Government of British Columbia, Ministry of Education. Retrieved from https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/resource-management/school-district-financial-reporting/revenue-expenditure-tables/1819-revenue-expenditure-tables

Ministry of Education. (2019b). 2019/20 Interim Operating Grants. Government of British Columbia, Ministry of Education. Retrieved from https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/resource-management/k-12-funding-and-allocation/operating-grants/k12funding-19-20

Ministry of Education. (2019c). BC Graduation Program Implementation Guide: Grades 10 to 12. Government of British Columbia, Ministry of Education. Retrieved from https://www2.gov.bc.ca/assets/gov/education/kindergarten-to-grade-12/support/graduation/graduation-implementation-guide.pdf

Ministry of Education. (2019d). Career Education 10-12 Guide. Government of British Columbia, Ministry of Education. Retrieved from https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/curriculum/career-education/en_career-education_10-12_career-education-guide.pdf

Ministry of Education. (2019e). Youth Work in Trades Program Guide: Program Procedures, Requirements, and Standards. Government of British Columbia, Ministry of Education. Retrieved from https://www2.gov.bc.ca/assets/gov/education/kindergarten-to-grade-12/teach/pdfs/curriculum/appliedskills/wrk-guide.pdf

Ministry of Education. (2019g). Work Experience Order. Government of British Columbia, Governance and Legislation Branch, Ministry of Education. Retrieved from https://www2.gov.bc.ca/assets/gov/education/administration/legislation-policy/legislation/schoollaw/e/m237_11.pdf

Ministry of Education. (2019h). Work Experience Program Guide: Program Procedures, Requirements, and Standards. Government of British Columbia, Ministry of Education. Retrieved from https://www2.gov.bc.ca/assets/gov/education/kindergarten-to-grade-12/teach/pdfs/curriculum/appliedskills/wex-guide.pdf

Ministry of Education. (2020a). BC Schools - First Time Grade 12 Graduation Rate (dataset). Government of British Columbia, Ministry of Education. Retrieved from https://catalogue.data.gov.bc.ca/dataset/bc-schools-first-time-grade-12-graduation-rate

Ministry of Education. (2020b). BC Schools - Student Headcount by Grade (dataset). Government of British Columbia, Ministry of Education. Retrieved from https://catalogue.data.gov.bc.ca/dataset/bc-schools-student-headcount-by-grade

Ministry of Education. (n.d.-a). BC Curriculum. Government of British Columbia, Ministry of Education. Retrieved from https://curriculum.gov.bc.ca/curriculum/

Ministry of Education. (n.d.-b). BC Schools - Six Year Completion Rate (dataset). Government of British Columbia, Ministry of Education. Retrieved from https://catalogue.data.gov.bc.ca/dataset/bc-schools-six-year-completion-rate

Ministry of Education. (n.d.-c). Career Programs. Retrieved from https://www2.gov.bc.ca/gov/content/education-training/k-12/support/career-programs

Ministry of Education. (n.d.-d). Certificates of Graduation. Retrieved from https://www2.gov.bc.ca/gov/content/education-training/k-12/support/graduation

Ministry of Education. (n.d.-e). Provincial Results: Post-Secondary and Career Preparation. Government of British Columbia, Ministry of Education. Retrieved from https://studentsuccess.gov.bc.ca/school-district/099/report/post-secondary-career-prep

Ministry of Education Staff Member. (2019, September). Personal Correspondence.

Molgat, M., Deschenaux, F., & LeBlanc, P. (2011, 11 11). Vocational education in Canada: do policy directions and youth trajectories always meet? Journal of Vocational Education & Training, 63(4), 505-524. doi:10.1080/13636820.2011.580361

Mortimer, J., Staff, J., & Vuolo, M. (2013). Adolescent Precursors of Pathways from School to Work. Journal of Research on Adolescence, 24(1), 145-162.

Neyt, B., Omey, E., Verhast, D., & Baert, S. (2019). Does student work really affect educational outcomes?: A review of the literature. Journal of Economic Surveys, 33(3), 896-921. doi:10.1111/joes.12301

OECD. (2017). Education at a glance: Enrolment by gender, programme orientation and mode of study (Edition 2017) (database). OECD, OECD Education Statistics, Paris. doi:10.1787/115fba3a-en

OECD. (2019a). Balancing School Choice and Equity: An International Perspective Based on Pisa. OECD, PISA. Paris: OECD Publishing. doi:10.1787/2592c974-en

OECD. (2019b). PISA 2018 Results (Volume II): Where All Students Can Succeed. Paris: OECD Publishing. doi:10.1787/b5fd1b8f-en

OECD. (2020a). Below upper secondary education (indicator). OECD. Paris: OECD Publishing. Retrieved from https://stats.oecd.org/viewhtml.aspx?datasetcode=EAG_NEAC&lang=en#

OECD. (2020b). Share of population by education and labour force status (indicator). OECD, Paris. Retrieved from https://stats.oecd.org/viewhtml.aspx?datasetcode=EAG_TRANS&lang=en

OECD. (2020c). Youth not in employment, education, or training (NEET) (indicator). OECD, Paris. doi:10.1787/72d1033a-en

O'Grady, K., Deussing, M.-A., Scerbina, T., Tao, Y., Fung, K., Elez, V., & Monk, J. (2019). Measuring up: Canadian Results of the OECD PISA 2018 Study. Toronto, Ontario: Council of Education Ministers of Canada. Retrieved from https://www.cmec.ca/Publications/Lists/Publications/Attachments/396/PISA2018_PublicReport_EN.pdf

Parent, D. (2006, 11). Work while in High School in Canada: its labour market and educational attainment effects. Canadian Journal of Economics, 39(4), 1125-1150.

Parkin, A. (2019, December). Personal Correspondence.

Quintini, G., & Manfredi, T. (2009). Going Separate Ways? School-to-work Transitions in the United States and Europe. OECD, OECD Social, Employment and Migration Working Papers (90). Paris: OECD Publishing. doi:10.1787/221717700447

Red Seal. (2016). Red Seal Brochure. Red Seal. Retrieved from http://www.red-seal.ca/others/rs_br.4ch.5r.2-eng.html

Red Seal. (2018). Red Seal Trades. Retrieved from http://www.red-seal.ca/trades/tr.1d.2s_l.3st-eng.html

Renn, R., Robert, S., Taylor, R., & Detwiler, D. (2014, 9 22). School-to-work transition: Mentor career support and student career planning, job search intentions, and self-defeating job search behaviour. Journal of Vocational Behaviour, 85, 422-432. doi:10.1016/j.jvb.2014.09.004

State Secretariat for Education, Research and Innovation. (2019). Vocational and Professional Education and Training in Switzerland: Facts and Figures 2019. Swiss Confederacy. Ed. VPET Policy SERI. Retrieved from https://www.sbfi.admin.ch/dam/sbfi/en/dokumente/webshop/2019/bb-f-z-2019.pdf.download.pdf/Fakten_Zahlen_BB2019_en.pdf

Statistics Canada. (2017a). Does education pay? A comparison of earnings by level of education in Canada and its provinces and territories. Government of Canada, Statistics Canada, Ottawa, Ontario. Retrieved from https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016024/98-200-x2016024-eng.pdf

Statistics Canada. (2017b). Focus on Geography Series, 2016 Census: British Columbia. Government of Canada, 2016 Census, Statistics Canada, Ottawa, Ontario. Retrieved from https://www12.statcan.gc.ca/census-recensement/2016/as-sa/fogs-spg/Facts-PR-Eng.cfm?TOPIC=9&LANG=Eng&GK=PR&GC=59

Statistics Canada. (2018a). British Columbia [Province] (table) Aboriginal Population Profile, 2016 Census. Government of Canada, 2016 Census, Statistics Canada. Retrieved from https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/abpopprof/details/page.cfm?Lang=E&Geo1=PR&Code1=59&Data=Count&SearchText=British%20Columbia&SearchType=Begins&B1=Labour&C1=All&SEX_ID=1&AGE_ID=9&RESGEO_ID=1

Statistics Canada. (2018b). Central Coast, RD [Census division], British Columbia (table). Aboriginal Population Profile. Government of Canada, 2016 Census, Statistics Canada, Ottawa, Ontario. Retrieved from http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/abpopprof/index.cfm?Lang=E

Statistics Canada. (2018c). Kitimat-Stikine, RD [Census division], British Columbia (table). Aboriginal Population Profile. Government of Canada, 2016 Census, Statistics Canada, Ottawa, Ontario. Retrieved from http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/abpopprof/index.cfm?Lang=E

Statistics Canada. (2018d). Mount Waddington, RD [Census division], British Columbia (table). Aboriginal Population Profile. Government of Canada, 2016 Census, Statistics Canada, Ottawa, Ontario. Retrieved from http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/abpopprof/index.cfm?Lang=E

Statistics Canada. (2018e). Skeena-Queen Charlotte, RD [Census division], British Columbia (table). Aboriginal Population Profile. Government of Canada, 2016 Census, Statistics Canada, Ottawa, Ontario. Retrieved from Skeena-Queen Charlotte, RD [Census division], British Columbia (table). Aboriginal Population Profile.

Statistics Canada. (2018f). Squamish-Lillooet, RD [Census division], British Columbia (table). Aboriginal Population Profile. Government of Canada, 2016 Census, Statistics Canada, Ottawa, Ontario. Retrieved from http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/abpopprof/index.cfm?Lang=E

Statistics Canada. (2019a). Chart 1: NEET rates for 20- to 24-year-olds, Canada and OECD, 1999 to 2019 (Chart). Government of Canada, Statistics Canada, Ottawa, Ontario. Retrieved from https://www150.statcan.gc.ca/n1/daily-quotidien/190705/cg-c001-eng.htm

Statistics Canada. (2019b). Table 17-10-0005-01 Population estimates on July 1st, by age and sex (Table). Government of Canada, Statistics Canada. doi:10.25318/1710000501-eng

Student Transitions Project Secretariat. (2019). Student Transitions Project. Government of British Columbia, Student Transitions Project Secretariat, Ministry of Advanced Education, Skills, and Training. Retrieved from https://www2.gov.bc.ca/gov/content/education-training/post-secondary-education/data-research/student-transitions-project

Vancouver School Board. (2020). Program Offerings. Retrieved from https://www.vsb.bc.ca/site/Career-Programs/programs/Program%20Offerings/Pages/default.aspx

Wilson, W. J. (1996). When Work Disappears: the world of the new urban poor (1st ed.). New York, New York: Knopf.

Appendix A.

Comparison of NEET Rates produced by the OECD and Statistics Canada

This Appendix addresses a methodological issue encountered in the comparison of the key statistic, the NEET Rate, between jurisdictions. There was a consistent gap between the Canadian NEET rate as reported by the OECD and Statistics Canada (Figure 26). From 2009-2018, Statistics Canada's reported NEET rate was, on average, 0.75 percentage points lower than the OECD's (OECD, 2020c; Statistics Canada, 2019a).

Due to this discrepancy, the NEET rates produced by the OECD and Statistics Canada are not directly compared to one another in this study. This difference is also important to remember when considering BC's reported 20-24 year-old NEET rate in 2018 (10%) (Brunet, 2019, p. 10). While this appears to be better than the case jurisdictions, that the data was collected by Statistics Canada means that it is not directly comparable to the national figures supplied by the OECD. If British Columbia's reported 2018 NEET rate were adjusted based on the average distance between the two measures, it would be better than Australia's, but remain worse than Germany's and Switzerland's.

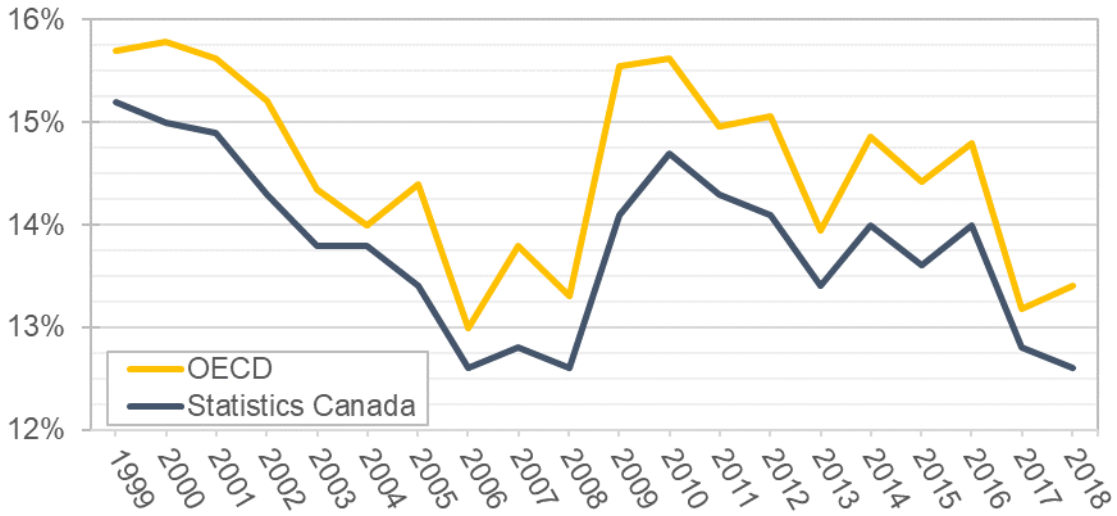

Figure A.1: The 20-24 year-old Canadian NEET Rate, as reported by the OECD and Statistics Canada

Source: OECD, 2020c; Statistics Canada, 2019a

Appendix B.

Vocational Education Programming in BC

This appendix further describes the current system of vocational education in British Columbia. In the case study, I focused on the components of BC's vocational education system that bear the greatest resemblance to the systems observed in other countries, and possess the greatest potential to connect students to labour force options in the future. This Appendix describes all programming in the "Work Order" and the mandatory Career-Life courses taught to all secondary students. Each of these programs are designed to ease a student's transition from secondary school into further education or the labour force (Ministry of Education, 2019g). The programs covered in this overview are:

- Career-Life Connections and Career-Life Education;
- Work Experience;
- Co-op;
- Career Technical Center programs; and,
- Secondary School Apprenticeship.

BC's career programs are divided between course- and pathway-based vocational education. Programs along the course-based module are not designed to be complementary with one another and serve to help students complete their Dogwood degree requirements. Programs in pathway-based vocational education are designed to be taken in sequence, and enable students to begin vocational postsecondary programming while still in secondary. The best example of this type of program is the Youth in Trades programming offered by the ITA, which will be used as an example of the types of programs that may be offered under these programs.

B.1 Career Education

All secondary students in BC receive career education. The Career-Life Education and Career-Life Connections courses must both be completed to receive the Dogwood Diploma (Ministry of Education, 2019c, p. 2).

The curriculum of the Career Education courses is shallow and broad. These classes are designed to “assist students in reflecting on where their personal interests and strengths overlap with emerging career-life opportunities in the world. Sense of purpose can occur where these three qualities overlap, offering possible career-life directions that are both personally meaningful and viable” (Ministry of Education, 2019d, p. 3). Career education courses provide students with information and skills intended to assist them after leaving secondary school. Topics include budgeting, planning, decision-making and reflecting, information on how and when their actions should be shaped by external influences, networking, mentorship, lifelong learning, and work-life balance (Ministry of Education, 2019d, pp. 5-6). Students are required to complete a capstone project in both courses: they must complete a self-assessment on what they have learned through the course that may be presented to their classmates (ibid., pp. 12-16).

Students must also complete an experiential component of the Career-Life Education course. All students are required to take more than 30 hours of out-of-school time in “experiential learning”, which may include service learning, volunteering, employment, fieldwork, entrepreneurship, or out-of-school project work (Ministry of Education, 2019d, p. 7). These placements are student-found, and it is expected that the experience will be shared with the teacher and classmates as a part of the student’s capstone assignment.

Within the curriculum, there is a lot of flexibility in what the teacher may offer to students. The curriculum emphasizes the roles of students in self-determining what their learning goals and assessment will be; instructors are only required to provide general information and provide resources as students ask for them. There may be space in these classrooms for instructors to encourage students to pursue specific career paths, but only if they have first been identified by the students. The general emphasis of the

course is on general skills that may be used widely in adulthood, not on fostering connections between students and specific career paths.

B.2 Work Experience

A common way for students to gain credit towards their Dogwood diploma outside of the classroom is through Work Experience (WEX). Students may take up to 8 credits, in two courses, towards their diploma through Work Experience courses (Ministry of Education, 2019h, p. 3). These courses recognize work-based placements students are already participating in, allowing students to personalize their student achievement to reach the Dogwood diploma with a balance of learning inside and outside the classroom (Ministry of Education, 2019c, p. 2).

Guidelines of the WEX program are broad. Students must complete 100-120 hours of in an occupational placement that may provide hands-on job experience, job shadowing, career mentoring or career simulation (Ministry of Education, 2019h, p. 3). Placements do not have to be at a worksite: students may complete their hours at a facility that provides any activity that simulates work. WEX placements may be paid or unpaid, though most are unpaid (ibid., p. 3).

WEX is administrated at the school the student attends by a teacher who supervises the course. There are several steps in the course's administration: the teacher provides all students in WEX with some basic information about their placement (like safety instruction), drafts a workplan with the student and employer to be used for evaluation, ensure the student is covered by WorkSafeBC, logs work hours to the student's file, and assess the student's performance against the workplan (Ministry of Education, 2019h, pp. 5-11).

Students in WEX are directly connected to an employer or trainer, but gain no formal, recognized work experience. The disadvantage is that students are only able to "job shadow" rather than gain concrete job skills while in WEX (Leber, 2019). The learning plan created by students is designed to address how their activity will prepare them for a life beyond school, but there is no follow-up required from the student or their teacher to ensure that the student is continuing down that pathway.

B.3 Career Technical Centres

Career Technical Centres (CTC) are school district-funded programming that place students in courses towards a Certificate or Diploma post-secondary program (Beeston, 2019). Students are enrolled in the “Dual-Credit” program, where they earn secondary and postsecondary credits for the course they are enrolled in (Beeston, 2019). Most CTCs share programs with nearby postsecondary institutions: students may take courses at the postsecondary institution, or a teacher from the postsecondary institution may teach a source at a secondary school.

Across the province, CTCs offer a diversity of programs, dependent on student demand and the availability of effective postsecondary partnerships. Most CTCs cover ITA-offered trades programs and other postsecondary programs in high demand from local students. For example, the Vancouver School Board’s Career Programs include Youth Train in Trades ITA-certifications like Hairstyling and Auto Service Technician, and technical training through Vancouver Community College in fields like Healthcare Assistance and Fashion Design (Vancouver School Board, 2020). In Abbotsford, the suite of trades programs is complemented by a partnership with the University of the Fraser Valley, which offers students the chance to begin a Certificate in Business Technology, Drafting, or Health and Human Services (Abbotsford Career Programs, 2020).

CTCs can form effective and long-lasting relationships with employers, unions, postsecondary institutions, and professional organizations that are required to create recognized credential programs. For example, Nanaimo’s Dental Assistant program requires the school to organize with VIU, receive accreditation from the Commission on Dental Accreditation of Canada and be recognized by the College of Dental Surgeons of BC (Career Technical Centre, School District 68, n.d.). Long running relationships between districts, such as the South Island Partnership and Northern Opportunities Partnership, have allowed multiple school districts to work through a single relationship with a nearby postsecondary institution. CTCs connect students with training and experience that makes them immediately employable.

B.4 Secondary School Apprenticeships

All secondary school apprenticeships are in ITA-registered trades. This program begins a student's apprenticeship in a trade under the supervision of an ITA-accredited Sponsor (Ministry of Education, 2019e, p. 3). All the ITA governs apprenticeships through the "Youth Work in Trades" program.

Students enroll in Work as an apprentice, receive pay from their employer and receive high school credits for work hours (ibid., p. 13). Program graduates must complete 900 work hours and maintain a passing average in the rest of their courses to complete Work.

Students must find an ITA-certified employer to serve as an apprenticeship Sponsor prior to entering the Work in Trades program. Once they have, an agreement between all involved parties (the student, employer, ITA and school) formalizes the apprenticeship relationship and affords the duties and benefits expected of any apprentice to the student (Industry Training Authority, 2018a). Employers have several basic responsibilities to their new apprentices: mentorship, hands-on training with different equipment and skills, monitoring the apprentice's progress, paying the apprentice's wages, and reporting progress and hours to the ITA (ibid.).

Students and employers bear most of the responsibility of forming the Employer Sponsor relationship that start an apprenticeship, and the ITA bears a lot of responsibility for the oversight of this relationship and the assurance that the apprenticeship's learning objectives are completed. Schools, in contrast, just need enough administrative flexibility to include the student's work credits in towards their Dogwood diploma.

B.5 Co-operative Education

Co-operative education (co-op) covers enrollments in work-based programming that are not in ITA-regulated apprenticeship arrangements. Courses offered as co-ops often have a complementary CTC course. Surrey's co-op programming (the province's most well-attended), offers student the opportunity to gain work experience that is relevant to field of study (Earl Marriott Secondary Career Programs, n.d., pp. 1-2).

Students in a co-op are required to complete coursework as a part of their study before beginning their work placement, fulfilling the academic

There is no specific co-op curriculum offered by the Ministry of Education (Ministry of Education, n.d.-a). Co-ops may be included as a component of another course. For example, a student may complete a co-op in event planning as a component of a Business course, or a co-op with a veterinarian as a component of a Science course (ibid.).

B.6 Youth in Trades: BC's Trade Career Pathway

Youth in Trades is a suite of Career Programs offered to secondary school students in ITA-regulated trades. These programs are designed to provide students with knowledge of occupational training, and with the opportunity to start down a career-oriented education pathway in secondary school (Leber, 2019). The suite of programming begins with Youth Discover the Trades and Youth Explore the Trades, both of which are Career Preparation courses. The Youth Train in Trades and Youth Work in Trades programs are Career Technical Centre and Secondary School Apprenticeship programs, respectively.

The Discover and Explore programs are intended to bring students, schools, and trades practitioners together to raise awareness of career opportunities in the trades among students (Industry Training Authority, 2018c, p. 3). Discover provides grants for School Districts that host events advocating for increased awareness of trades careers among middle and high-school students (ibid.). Explore partners the ITA and a School District with a local post-secondary institution to offer a short curriculum to students who may be interested in trying several different trades skills (Industry Training Authority, pp. 7, 11, 16).

Discover programs are essentially a block where schools can introduce students to work in the trades through a one-off event. District staff are responsible for administering the event, and the ITA provides funding for the event (Industry Training Authority, n.d.-a). Students are only required to attend: Discover programs do not include graded assignments. Discover is intended to reach students in lower secondary

who may be interested by their experience into pursuing trades education in upper secondary.

Youth in the Explore program get hands-on experience in the trades, with the intention of prompting awareness vocational education programming (Industry Training Authority, n.d.-b). Students in Explore are placed in a training program at a postsecondary institution, where they learn about several trades from professional instructors and earn basic skill credentials, such first aid and workplace hazardous materials information system recognition (Industry Training Authority, 2017a, p. 27).

Explore programs are partially funded by the i rely on administrative support from School Districts and postsecondary institutions (ibid., p. 5). As attendance at an Explore program is a disruption to the school scheduling status-quo, different factors such as employer and postsecondary availability will dictate how many different trades students' sample in the program.

The Discover and Explore programs are introduce students trades training, and the Train and Youth Work programs are the first steps taken by a student on a trades pathway. Train and Work start students on a post-secondary level path to skill certification in the trades (Train) and apprenticeship (Work) (Industry Training Authority, n.d.-c; Industry Training Authority, n.d.-d).

Train is organized and administered by School Districts, which receive $3,200 from the ITA for every student that receives training and credentials for courses completed through the training program (Industry Training Authority, 2017b, p. 2). The classroom experience varies, as in most Career Technical Centre programs: a school may purchase seats in a postsecondary classroom or hire a new teacher who is capable of delivering technical content if there are enough students who are interested (ibid., p. 2). Train provides students with the basic courses to transition into vocational training at a postsecondary institution afterwards. The ITA ensures that the program complies with trade-specific standards for introductory courses.

The Work program is the beginning of the student's apprenticeship. Work requires students to connect with the ITA to find an employer who will sponsor their apprenticeship (Industry Training Authority, n.d.-d). After finding a sponsor, the student's apprenticeship begins, and the student earns credits towards their Dogwood Diploma

while they are working (Ministry of Education, 2019e, p. 1). Students who complete the Work program and complete their Dogwood Diploma with a C+ or better average are eligible for a $1,000 award from the ITA (ibid., p. 13).

Although they may be taken at separate times, the Train and Work programs are intended to complement one another in the student's learning path. Even if students are not able to take them concurrently, skills learned during the Train program may be used to find an employer sponsor for the Work portion in another year. To make both programs work as intended, the student, school, ITA, and employer must be aligned to ensure that there is an effective route through which students are able to easily navigate the paperwork needed to start their apprenticeship.

Youth in Trades represents what the suite of programs offered by the Work Experience Order are capable of: introducing students to a career pathway and enabling them to choose to begin it while in secondary school. Ideally, it can connect students to postsecondary education and the labour market without compromising on Dogwood completion.

Appendix C.

Detailed Stakeholder Analysis

The stakeholder analysis in Chapter 8 used a Salience v. Power graph to identify the influence that potential stakeholders would have over the policy option's political success. The following stakeholders were identified by interviewees: parents, teachers, school boards, and employers.

The relative salience, power, and expected support for the policies was also derived from the stakeholder's opinions. The position of the stakeholder's square on the graph captures their salience and power to regarding the policy option. Stakeholders in the top right of the graph will have a large degree of power over the project's success and will definitely become involved in it. Those in the top left quadrant may become vocal opponents or loud cheerleaders, but have little institutional capacity to influence its outcome. Those in the bottom right quadrant are unlikely to be motivated by the policy option, despite having power over its outcome. Those in the bottom left quadrant may be safely ignored in policy implementation: they will not have much power over the policy and are unlikely to be politically activated by its implementation. The colour of their icon is an estimate of the stakeholder's favourability toward the option. Red is opposition, and green is support.

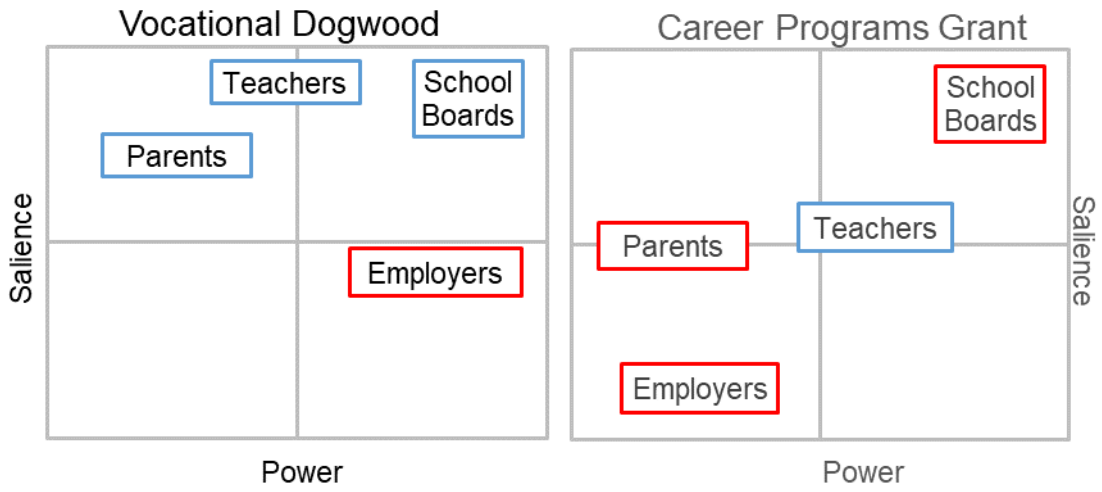

Figure C.1: Stakeholder Analysis of Vocational Dogwood and Career Programs Grant

Source: Stakeholders identified through Beeston (2019); Blake (2019); Ministry of Education staff member (2019); Leber (2019); and Parkin (2019).

The Career Programs Grant is heavily favoured over the Vocational Dogwood for a single, major reason. The Grant makes an ally of the stakeholder that has the most power over the option's success: School Boards. All interviewees who work in the school system acknowledged the power that school boards had over the success of a district's Career Programs. The Career Programs Grant is expected to be supported by boards, as it provides additional funding without additional reporting criteria.

In contrast, the dramatic shift that the Vocational Dogwood program represents is anticipated to galvanize opposition from school boards, teachers, and parents. Elected boards would not be happy to deal with the massive shift in resources that would accompany the adoption of the Vocational Dogwood, Teachers would not be expected to support a loss of students (and therefore jobs) to non-ATA staff teaching vocational subjects, and parents are expected to strongly oppose the policy change given the strong social stigma associated with vocational education in Canada. The Career Programs Grant will not incite opposition in the same way, as it is designed to gradually shift the behavior of school districts.

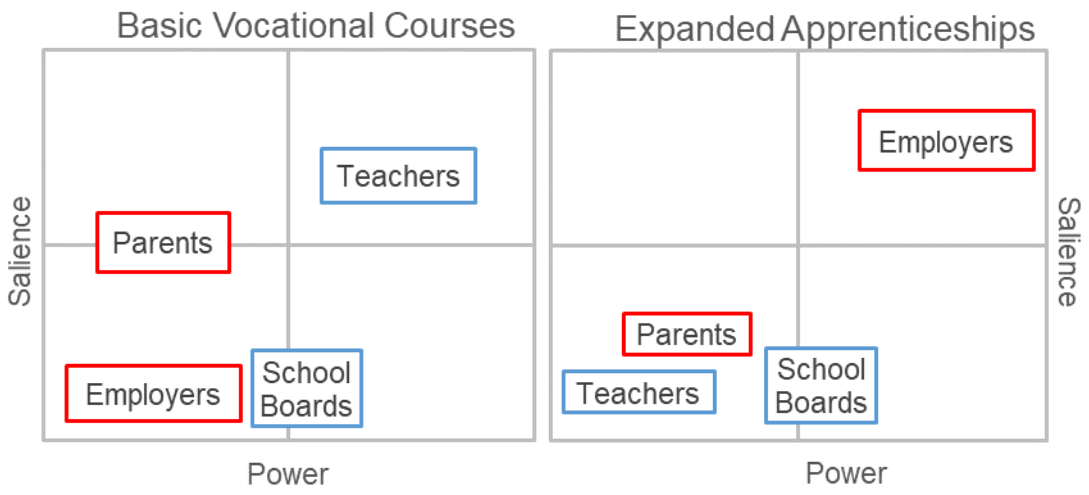

Figure C.2: Stakeholder Analysis of Basic Vocational Courses and Expanding Apprenticeships

Source: Stakeholders identified through Beeston (2019); Blake (2019); Ministry of Education staff member (2019); Leber (2019); and Parkin (2019).

Expanding Apprenticeships is anticipated to draw slightly more support as one of the groups in favour of its implementation are crucial to the success of the option: employers. Teachers are expected to oppose Vocational Education Courses, because – as with the Vocational Dogwood above – this option would directly place more students in the hands of non-ATA educators.

The remainder of the stakeholders are expected to matter little to the political feasibility of changes to the regulation of vocational education. These policy options are not expected to matter much to school boards, while parents would have very little power in either decision. Parents who support the expansion of vocational education generally are expected to support both policies.