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Apprenticeship in International Perspective: Points of Contrast with Ontario

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Executive Summary

This report examines the apprenticeship systems of seven jurisdictions – Germany, Austria, Switzerland, Australia, England, France and the United States – to draw comparisons with Ontario’s apprenticeship system. The purpose of this work is to help us think differently about how the challenges that Ontario’s apprenticeship system faces have been addressed abroad. While knowledge of Ontario’s apprenticeship system is assumed, the report closes with profiles describing each of the seven apprenticeship contexts in detail.

The comparative analysis proceeds according to six different dimensions: historical and cultural factors; governance; scope; participation; apprenticeship structure; and qualifications and completion rates. For each case, common practice abroad is contrasted with Ontario’s apprenticeship system with the purpose of highlighting the differences that exist.

The following observations emerge from the comparison:

- 1) The success of the dual system model of apprenticeship in Germany, Austria and Switzerland is intricately linked to historical and cultural factors that could not be emulated in Ontario. In particular, historical factors have encouraged both positive perceptions of apprenticeship and strong employer participation in dual system countries.
- 2) Though many of Ontario’s international counterparts operate with similar federal systems of government, in which matters related to education typically fall under provincial jurisdiction, an examination of their apprenticeship systems finds a much closer involvement of the federal government in coordination and decision-making than we find in Ontario, especially when it comes to legislation.
- 3) While apprenticeship in Ontario is still largely restricted to the trades, other jurisdictions have expanded apprenticeship beyond this traditional sector into high-growth occupations in emerging areas of the economy.
- 4) Apprentices in Ontario tend to be older than those in Europe, which affects the challenges they face. The International Labour Organisation identifies Canada and the United States as the only two countries in which apprenticeship is primarily used by adults (ILO & World Bank, 2013).
- 5) Studies have shown that the costs of apprenticeship function as a major barrier to participation in Canada, especially for older participants. Despite this, many apprentices in Ontario must pay for the in-class portion of their training, and those who do not qualify for Employment Insurance are not salaried during this time unless their employers choose to top up or pay their wages. This stands in contrast to several jurisdictions abroad, where apprentices continue to be paid while training off the job and where in-class training is often free.
- 6) Block release seems to be more common in Ontario, and Ontario’s apprentices spend less time learning off the job than do apprentices in the other jurisdictions considered.
- 7) Any attempt to increase participation in apprenticeship should keep in mind the cases of Australia and England, both of which made changes in recent decades in an attempt to expand their apprenticeship systems and increase participation. While both expansions were successful in numerical terms, they also gave rise to questions about the quality of placements. Both cases demonstrate that expansion can be achieved by carefully marketing apprenticeship and by introducing the model to new, emerging sectors of the economy, but that precautions must also be taken to ensure the quality of the placements being offered and thus also the value and transferability of the credentials earned.

This investigation has also given rise to other questions that might be considered before undertaking any reform to Ontario's apprenticeship system. The first concerns the quality of apprenticeship, as we know very little about how well apprenticeships prepare participants, especially youth, to have successful careers in a rapidly changing economy.

The second question concerns the relationship between apprenticeship and postsecondary education, and of the pathways between the two. The literature identified transitions from apprenticeship to postsecondary education as an area of weakness for many apprenticeship systems internationally. We might argue that Ontario addresses this need with its Co-op Diploma Apprenticeship (CODA) programs. In a province that suffers from negative perceptions of apprenticeship, an expansion of apprenticeship might consider proceeding through CODA and emphasizing its link to a well-established postsecondary credential.

The final question asks about the relation between apprenticeship and other forms of work-integrated learning (WIL) in the postsecondary sector. How could Ontario's current emphasis on WIL in general, and perhaps co-op in particular, be viewed as a competitive advantage in an expansion of apprenticeship? Could Ontario's current focus on WIL be serving the same function as apprenticeship abroad by similarly helping students transition to the labour market? Does Ontario's strength in WIL diminish the need to expand apprenticeship? These questions would warrant further consideration.

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Introduction

The structure and governance of apprenticeship systems differ from country to country according to the policy decisions made, the purpose of the system and the cultural context in which it is embedded. While some jurisdictions have long traditions of apprenticeship that date back several centuries and that make apprenticeship central to the development of the labour force, in other countries apprenticeship is a relatively new phenomenon whose role has historically been limited to certain sectors of the economy. This report examines the apprenticeship systems in seven jurisdictions – Germany, Austria, Switzerland, Australia, England, France and the United States – to draw comparisons with Ontario’s apprenticeship system. What differences can be identified between Ontario’s apprenticeship system and those of its international counterparts? What lessons can be learned from these examples to inform the continuous development of Ontario’s apprenticeship system? The purpose of this comparative work is to help us think differently about how the challenges that Ontario’s apprenticeship system faces have been addressed abroad.

Each of the seven countries included in this analysis has been selected for different reasons. Germany, Austria and Switzerland are collectively referred to as the ‘dual system’ countries and are often presented as possessing apprenticeship systems that could inspire reform in other countries. Australia and England have undertaken a series of reforms of their apprenticeship systems in the last 30 years that make them of particular interest. They also bear a closer cultural similarity to Ontario than do the dual system countries. France is included primarily out of interest for the manner in which it encourages employer participation in apprenticeship through taxation, while the United States are included because they struggle with many of the same challenges that Ontario faces. At the risk of appearing overly critical of Ontario’s apprenticeship system or of painting too rosy a picture of its foreign counterparts, note that this report does not discuss in detail the weaknesses of each system chosen. This would require greater attention to each specific context than can be afforded here.

For the sake of expediency, this report assumes knowledge of the apprenticeship systems being discussed. Those less familiar with Ontario’s apprenticeship system might refer to a companion HEQCO report (Refling & Dion, 2015) that surveys some of the policy debates in the area of apprenticeship, describes the structure and governance of Ontario’s apprenticeship system in detail and presents relevant data. Country-specific profiles have also been included at the end of this report to describe the international contexts discussed in greater detail. For ease of reference, these profiles proceed according to the same six dimensions used in this report’s analysis. Readers unfamiliar with the foreign apprenticeship systems discussed are advised to review these profiles before proceeding to the report itself.

The literature lists a number of challenges for apprenticeship in Canada in general and Ontario in particular that might help frame our investigation further. Stewart (2009) points to Ontario’s inability to expand apprenticeship well beyond trades occupations as a limiting factor, along with the inflexibility of block release for training delivery, the generally poor essential skills of some apprentices and low completion rates. The International Labour Organisation adds to this list with its own survey of apprenticeship stakeholders in Canada, citing poor linkages with schools, issues with assessment and standardization, and poor employer attitudes toward apprenticeship as weaknesses of Canadian apprenticeship when viewed in international perspective (ILO & World Bank, 2013). The list continues to include the academically weaker nature of apprenticeship candidates in Canada, the low status of apprenticeship and the impact of salary interruption during training. Suggestions for improvement emerging from the ILO’s analysis mention government promotion of the apprenticeship brand and better pathways into postsecondary education (PSE) as considerations to strengthen the system.

The challenges one identifies with Ontario's apprenticeship system will influence the perspective brought to this report's analysis – the 'solutions' sought abroad will inevitably be conditioned by the 'problems' one finds at home. The purpose of this report is not to list the challenges that Ontario faces, though that topic is broached in the companion report (Refling & Dion, 2015).

The analysis presented here proceeds according to six different dimensions: historical and cultural factors; governance; scope; participation; apprenticeship structure; and qualifications and completion rates. For each case, common practice abroad is contrasted with Ontario's apprenticeship system with the purpose of highlighting the differences that exist.

Historical and Cultural Factors

Historical and cultural factors affect both the structure and perception of apprenticeship in a country. They must also be considered carefully when drawing inspiration for change from a foreign jurisdiction, since differences in culture can influence the predicted outcomes of any borrowing in unexpected ways. As a result, this section is critical of the notion that Ontario could simply adopt the dual system of apprenticeship as it is implemented in Germany, Austria or Switzerland, for example, without understanding the various cultural factors that make it effective in these contexts.

Apprenticeship in many European countries dates back to the Middle Ages, giving it a long and often venerable history. While many European countries have since reformed their apprenticeship systems considerably to adapt to the demands of the modern world, the cultural status of apprenticeship often remains. This can be contrasted to the situation in Ontario, where apprenticeship calls to mind continuing debates surrounding immigration and vocational training that have mixed and emotional histories.

The Social Cooperation Model

Historical and cultural factors also influence the attitudes that employers bring to apprenticeship. German employers have been closely involved with apprenticeship for close to 150 years now. As a result, they have learned to appreciate the benefits that it provides both youth and their companies and to accept any sacrifices in terms of costs or lost productivity that the dual system might entail.¹

The social cooperation model upon which the dual system is built, which sees decisions involving apprenticeship made jointly by governments, unions, schools and employers, bears the legitimacy of a long history. The creation of such close forms of cooperation, which go well beyond those that exist in Ontario's apprenticeship system, would be difficult to imagine in the Canadian context. Scholars argue instead that apprenticeship in Canada "can only be understood against the background of the highly decentralized and adversarial system of labour relations" in this country, which in many ways precludes the kind of collaboration observed abroad (Schuetze, 2003, p. 83; cf. Lehmann, 2005).

These different environments in turn lead to very different experiences for apprentices on the ground. Lehmann's (2005) study of apprentices in Alberta and Germany highlights many of these points of contrast.

¹ There is debate in the literature about whether participating in apprenticeship actually entails any such sacrifice for employers. Research in Austria, Germany and Switzerland, for example, almost unanimously points to a net benefit for the employer (Bliem, Petanovitsch & Schmid, 2014). Still, the perception of a sacrifice remains common among many Canadian employers and is often used to justify not hiring apprentices, and this despite evidence to the contrary.

While apprentices in both jurisdictions viewed their training as a positive experience, Canadian apprentices had very little knowledge of apprenticeship regulations and of the career paths open to them. Their German counterparts had learned about this extensively from their co-workers, at school and from unions. While the Albertan apprentices' skills development was more closely limited to workplace readiness skills and was poorly integrated with their practical training, close cooperation between employers and training institutes ensured that German apprentices learned about their rights as workers as part of their off-the-job training and that practical and theoretical components of learning were closely integrated. As Lehmann describes it:

German employers have a relatively high level of commitment to apprenticeship training, unions are involved at all levels, and a national network of career counselling and employment centres provides important linkages into the labour market. In contrast, Canadian employers have very low levels of participation in any kind of workplace training, and unions tend to be concerned about the threats young workers with very low levels of pay may pose to more senior, unionized workers. (2005, p. 108)

Each of these situations is very much a product of the historical context within which these apprenticeship systems arose. Not only would this close collaboration between stakeholders be difficult to replicate in Ontario, but the social collaboration model plays such a central role in the German apprenticeship system that its absence in Ontario would limit possibilities for any implementation of the dual system here. This is one of several ways in which the dual system countries present an unrealistic model for Ontario's apprenticeship system.

Classifications of Apprenticeship Systems

The literature on apprenticeship identifies several points of contrast between two general types of apprenticeship systems: Anglo-Saxon apprenticeship systems, such as those found in Canada, Britain and the United States; and Northern European systems, such as those in the dual system countries (among others) (cf. Sharpe & Gibson, 2005). While Anglo-Saxon systems tend to be market-driven, leading to firms that have relatively low levels of commitment to apprenticeship participation, especially when their demand for apprentices might be low, Northern European systems are built upon social partnerships between business and labour, and decisions concerning the supply of apprentices are based on industry consensus. Secondary schools in Anglo-Saxon countries tend to be poorly integrated with apprenticeship systems when compared to Northern European countries. The immediate implication of this dichotomous model, Sharpe and Gibson suggest, is to emphasize that dual system practices are far removed from those in Canada and that "the German system exists in a particular context of social and labour market institutions that are unlikely to arise in Canada" (2005, p. 39; cf. Evans & Bosch, 2012; Stewart & Kerr, 2010).

Apprenticeship and Postsecondary Education

Finally, we must also remember that apprenticeship systems and the social factors influencing them are in a constant state of flux. For example, while Canadian stakeholders in apprenticeship decry its low status in this country and criticize the perceived overemphasis on forms of 'academic' education such as college and university, we can observe similar shifts occurring around the globe, including in dual system countries with strong traditions of apprenticeship. Sharpe and Gibson (2005) describe the debate that has arisen in Germany, for example, about the value of vocational education, including apprenticeship, labeling it as "outdated and archaic, narrowly skills-based and more concerned with antiquated virtues than with the broadly defined demands of new workplaces" (p. 26). This increased criticism of vocational education has often been paired with a rise in PSE participation, such that many countries with traditionally strong vocational education traditions have had to introduce new policy measures to maintain the popularity of these systems (OECD, 2013), and this despite the purported benefits of apprenticeship in easing the school-to-work

transitions of youth in a time of high youth unemployment in Europe.

Governance

Apprenticeship systems in Canada are governed primarily at the provincial level. While the federal government is involved through Employment and Social Development Canada (ESDC) in certain elements of apprenticeship deemed to have national relevance, such as the establishment of the interprovincial Red Seal program, many of the key decisions, including the passing of legislation and the establishment of apprenticeable trades, are made at the provincial level. Though many of Ontario's international counterparts operate with similar federal systems of government, an examination of their apprenticeship systems finds a much closer involvement of the federal government in coordination and decision-making. Indeed, Cappon (2014) identifies this lack of federal involvement as one of the primary shortcomings of apprenticeship in Canada.

While the dual system countries premise their apprenticeship systems on high levels of cooperation and joint decision-making between stakeholders, all levels of government are highly involved in the coordination and management of the system. Education is a provincial area of jurisdiction in each of Germany, Austria, Switzerland and Australia. Yet in each case the federal governments play a key role in legislating apprenticeship and in coordinating certain elements of the system (ILO & World Bank, 2013; Sharpe & Gibson, 2005). In Germany, for example, a federal law defines apprentices as employees and outlines their rights, including access to social insurance programs and their right to protection from dismissal, in addition to making training contracts mandatory (ILO & World Bank, 2013; Lehmann, 2005). German states, for their part, regulate training content and conditions for each occupation, while local chambers of commerce ensure that employers are respecting regulations.

In Austria, all forms of vocational education, including apprenticeship, are legislated and regulated at the federal level, while state governments handle execution. The same is true in Switzerland, where education is traditionally the responsibility of the cantons. Apprenticeship emerges as an exception, governed jointly by the federation and the cantons, with considerable input from employers, unions and trade organizations mandated by law.

The Australian example is often cited as being particularly relevant to Canada, since both the Canadian and Australian governments devolve substantial responsibility for elements of their apprenticeship systems to provincial levels of government. While apprenticeship contracts are registered and training organizations are funded at the state level, the federal government plays a major policy role and is responsible for most incentives and support services available to apprenticeship participants. The intervention of the Australian federal government in two key areas – the passing of national legislation and the creation of national competency standards for apprenticeship – may contain important lessons for Canada, where the lack of national legislation and of national competency standards in many occupation areas are identified as particular shortcomings of the apprenticeship system in the literature (Sharpe & Gibson, 2005), though the existence of the interprovincial Red Seal program addresses some aspects of the latter issue for some occupations.

Alternate systems of governance exist, of course. Much of the responsibility for apprenticeship in France is held at the local level, while England lacks national legislation related to apprenticeship entirely. Some governments have also sought to improve the efficiency of their apprenticeship systems by scaling back rather than deepening their involvement in it. Australia, for example, opened its apprenticeship system up to

the free market by encouraging the creation of non-public training providers and by granting employers and apprentices the choice of which provider to use for their training (Hoeckel, Field, Justesen & Kim, 2008).

Regardless of the division of responsibilities, Steedman (2012) reminds governments that they should not seek to micro-manage apprenticeships and that the exclusion of employers from important decisions and excessive bureaucratic demands can harm the system. Despite this need to make decisions in a manner that engages stakeholders, there is a clear role for government to play in coordinating and administering an effective system.

Scope of Apprenticeship

While apprenticeship in Ontario is still largely restricted to the trades, other jurisdictions have expanded apprenticeship beyond this traditional sector into high-growth occupations in emerging areas of the economy. Varying the scope of apprenticeship can also attract different kinds of individuals to training and help battle the poor perceived status of apprenticeship.

Usher (2013) observes that 5 of the top 10 apprenticed occupations in Germany are not apprenticeable in Canada: retail sales, office administration, business administration, medical administration and wholesale/export sales. Conversely, if we examine the top 10 apprenticed occupations in Ontario both by registration and by growth, we observe the continued predominance of trades occupations, albeit with some exceptions, including the rapidly growing 'user support technician,' a type of employee in the IT sector.

Table 1: Top 10 Apprenticed Occupations in Ontario by Registrations, 2012

	Registrations
User support technicians	26,481
Automotive service	24,282
Electricians	18,801
Hairstylists and estheticians	11,283
Plumbers, pipefitters and steamfitters	9,789
Food service	9,018
Carpenters	8,892
Early childhood educators and assistants	8,118
Millwrights	5,826
Machinists	5,643

Table 2: Top 10 Apprenticed Occupations in Ontario by Growth Rate in Registrations, 2006-2012

	Growth
User support technicians	808%
Stationary engineers and power plant operators	288%
Community and social service workers	215%
Heavy equipment and crane operators	195%
Welders	129%
Other major trade groups	104%
Construction workers (other)	101%
Early childhood educators and assistants	83%
Metal workers (other)	51%
Plumbers, pipefitters and steamfitters	46%

Many occupations that can be pursued through apprenticeship abroad are restricted to postsecondary study here. Nursing, for example, which is apprenticeable in some European countries, involves postsecondary study in Ontario, as do many business and administration positions. Engineering is a popular apprenticeship in both Germany and England. The range of occupations offered through apprenticeship in Germany also improves its status as a mode of study: while there is recognized variety in the quality of apprenticeship placements and occupations, the mode of study itself attracts individuals with a range of academic abilities and skill levels.

In Austria, apprenticeships exist in a wide range of areas, including information technology, trades, clerical and sales professions. In Germany, apprenticeships in the manufacturing and service sectors – traditionally popular with participants – are giving way to positions in computer and IT industries, where companies now fight for the best applicants (Heinz, 2003).

The English government has similarly established apprenticeships in a variety of high-growth and high-demand industries such as information technology, finance, legal services and digital media. Apprenticeships in business administration, retail and health care have seen particular popularity of late, making up three-quarters of starts in the 2012 academic year. Engineering also made up 13% of starts during this same time. The top five fields for apprenticeship starts in 2012 were health and social services, including health care assistants and social service officers; customer service; management, including floor managers and help desk managers; business administration, including office supervisors and legal secretaries; and hospitality and catering, including receptionists and hotel managers (Ayres & Gurwitz, 2014).

Participants

Age of Apprentices

Apprentices in Ontario and the United States tend to be older than those in Europe, which affects the challenges they face and, some might argue, the policy responses government might take to reform

apprenticeship. One might reasonably question, for example, how measures implemented in an apprenticeship system populated largely by youth would function in a system used primarily by adults. Similarly, it might understandably be difficult to engage high school-aged children in apprenticeship through Youth Apprenticeship Programs when the apprenticeship system is largely built for seasoned workers.

While apprenticeship in Canada is open to participants from a range of age groups, roughly half of apprentices nationally are in their 20s and more than 30% are 30 or older (Lerman, 2014). This stands in stark contrast to many European countries, especially the dual system countries, which attract much younger participants. This makes it impossible for Ontario's apprentices to benefit from one of the most prominent advantages of apprenticeship observed abroad: its ability to ease school-to-work transitions and help tackle youth unemployment.

England, for its part, has opened its apprenticeship system, which was traditionally geared toward youth, up to adults, a move that stirred controversy due in part to elevated youth unemployment rates in the country (ILO & World Bank, 2013). The English government adjusted its funding scheme in response: while apprenticeships are fully funded for participants aged 16 to 18, the government only pays 50% of costs for apprentices 19 to 25 and 40% for those aged 25 and above (OECD, 2014). Australia also makes apprenticeship open to youth and adults, though it is reserved for youth under 25 in Germany as well as in France, except under certain exceptional conditions (ILO & World Bank, 2013; Steedman, 2012). The ILO identifies Canada and the United States as the only two countries in which apprenticeship is primarily used by adults (ILO & World Bank, 2013).

Streaming

How do other countries manage to involve youth in apprenticeship to such a degree? The answer to this question can be found in the important role that streaming plays in some foreign high school systems.²

In dual system countries such as Germany and Austria, apprenticeship is a pathway most common for those students who enter the lower form of secondary school after completing grade 9. On the one hand, this streaming process severely limits a student's choice of occupations upon completion. On the other, however, students tend to be well prepared for and well informed about those career paths for which they do qualify, leading, for example, to a high level of knowledge about the intricacies of apprenticeship and about the doors that it may open for them (Lehmann, 2005).

In Germany, students are introduced to apprenticeship in detail during school time. Teachers take time in the closing years of compulsory schooling to discuss career options with students and to work through a collection of information packets. Students practice composing letters to firms seeking apprentices and mock interviews are organized. Companies visit local high schools to speak about their apprenticeship programs and offer weeklong internships as 'try-outs' to interested students (Parilla & Berube, 2014). This is complemented outside of school by the work of an extensive network of employment centres that engage in vocational counseling and help students interested in apprenticeship learn more about the process and find employers.

Restrictions on employment further encourage students to participate in apprenticeship. While high school students seeking part-time employment in Ontario can usually find a job on their own, Germany restricts employment in many apprenticeable areas for individuals under the age of 18 to those who are pursuing an

² See Taylor (2005) for a detailed exposition of the history of streaming in Ontario's school system.

apprenticeship qualification. This effectively limits employment options for those under 18 not participating in apprenticeship to a narrow range of unskilled occupations.

The use of streaming in German high schools has been criticized for precluding upward social mobility and for reproducing inequality. It is often seen to be at odds with the aspirations of youth in an increasingly open and fluid society. Critics have become even more forceful as evidence accumulates concerning the better social and labour market outcomes of students who pursue an academic stream of postsecondary study (Lehmann, 2000).

Costs

Studies have shown that the costs of apprenticeship function as a major barrier to participation in Canada, especially for older participants. Examining time to completion using data from the 2007 National Apprenticeship Survey, Cadieux (2010) finds that the most common reason apprentices cited for not completing their training was that they could not afford it. Older apprentices and those who were married or had dependents were also less likely to complete, again suggesting the difficulty older apprentices may have juggling their personal responsibilities and their training. Dooley and Payne (2013) point out that older apprentices often have less financial support than might be expected of younger apprentices, who might live at home or rely on their parents for support.

Apprentices in Ontario must often pay tuition for the in-class portion of their training, which is frequently offered by one of the province's colleges and usually in block release format. Some apprentices also go unpaid during this training period. While many will qualify for Employment Insurance, this is contingent on the number of hours the apprentice has worked before beginning their off-the-job training and is therefore not guaranteed for every participant. In contrast, off-the-job training is free for apprentices in Germany, Austria and France. Apprentices in these countries continue to collect a salary from their employers while training off the job, which is also more likely to be offered in a day release format.

Other governments have sought to lighten the financial burden on apprentices by introducing support programs similar to those available to students in other areas of PSE. The Australian government, for example, has created a new system of support loans to help apprentices cover the day-to-day costs of completing an apprenticeship. Loan amounts could rise to AUD \$20,000 over four years and repayment is contingent upon income, only requiring repayment once an apprentice's annual income reaches AUD \$51,309 (OECD, 2014).

Employers

Incentivizing and maintaining employer participation in apprenticeship presents a constant challenge in every jurisdiction, though the extent of this challenge varies. Cappon (2014) identifies the difficulty potential apprentices face in securing a position as "the biggest constraint on apprenticeship placements and completions in Canada" (p. 38), suggesting that creating interest in apprenticeship among potential apprentices poses less of a challenge for the system than attracting employers to it.

Many sources in the literature reference the different culture among employers in Canada and in the dual system countries. Employers in Germany and Austria take ownership of the apprenticeship system and feel invested in the success of its participants (Evans & Bosch, 2012). In contrast, North American employers often shirk any kind of training responsibility, be it through apprenticeship or otherwise (Cappon, 2014; Evans & Bosch, 2012).

The French have a unique way of incentivizing participation in apprenticeship through taxation. The French apprenticeship system is funded in large part through a levy on French employers. French companies are asked to devote a certain percentage of their payroll value to training, of which a further percentage must be earmarked for apprenticeship. Those who do not spend this money are taxed the difference (OECD, 2014; Sharpe & Gibson, 2005). Companies that train a specific number of apprentices are exempt from the tax, with their contribution to on-the-job training essentially considered to be equivalent to the amount of the tax (Steedman, 2012).

Still, the French approach remains but one of many possibilities for incentivizing apprenticeship, which might also include grants or tax credits to employers, wage subsidies, and clauses in public procurement contracts requiring the hiring of apprentices.

Apprenticeship Structure

An analysis of the structure of the apprenticeship experience in Ontario and abroad suggests that block release seems to be more common in Ontario, and that Ontario's apprentices spend less time learning off the job than do apprentices in the other jurisdictions considered (cf. Usher, 2013).

Apprentices in Ontario spend between 85 and 90% of their time on the job, which is considerably more than apprentices in Germany, for example, who spend about 70% of their time on the job and 30% in day release. The extreme example might be France, whose apprentices only spend between 60 and 75% of their time on the job. The remainder is spent at a dedicated training centre for apprentices. French apprentices generally spend on average one week in class and three weeks on the job each month. The content of French apprentices' off-the-job training is also noteworthy in its breadth. French off-the-job training is so comprehensive as to resemble schooling, with two-thirds of training made up of courses in French, math, languages, history, geography and sports, and only the remaining third dedicated to practical education in the area of apprenticeship.

French apprentices are also observed and supported closely to ensure that their training is a beneficial experience and to coordinate the relevance of off-the-job and on-the-job training. Throughout their contracts, apprentices are monitored by a dedicated tutor, an employee of the training centre charged with following up on the apprentice's training and progress, ensuring the complementarity and educational value of on-the-job and class training, and managing communication between the apprentice, the employer and the training centre (OECD, 2014; ILO & World Bank, 2013).

Qualifications and Completion Rates

As in Ontario, Australia, France, Germany and England all have equivalents to our compulsory occupations, areas in which certification is required after the completion of training before an individual can legally begin to work in the sector. Many of these occupations tend to be in the trades – electrician is an oft-cited example (ILO & World Bank, 2013).

In other countries, certifications are valued but not mandatory because employers understand and respect the system that produces apprentices. In Germany, certificates of apprenticeship are only required by law in a limited range of occupations, such as for truck drivers and aircraft maintenance technicians. In practice, however, the cultural currency of apprenticeship is such that a German employer would rarely employ an

individual without a certificate of apprenticeship for an occupation where one exists (ILO & World Bank, 2013).

This contrasts to the situation in England, where the lack of national legislation on apprenticeship and the lengthy list of credentials one can acquire have made both the value of an apprenticeship and the transferability of the credentials earned questionable. Upon completion of their training, English apprentices can obtain one or more qualifications from the country's long list of National Vocational Qualifications, which contains over 1,000 entries. On the one hand, this ensures that every apprentice will leave training with at least one nationally recognized credential. On the other hand, however, the narrow description of tasks contained in some NVQs has led critics to question their practical transferability on the labour market. Others have criticized the assessment of NVQs which, first, occurs by the employer on the job and, second, minimizes the contribution of theoretical learning by basing assessment entirely on practical components (Steedman, 2001). Reforms have been proposed to address both of these shortcomings by making the assessment process more objective as well as by creating new transferable skills-related NVQs for literacy and math skills (HM Government, 2013).

It has often been suggested that Ontario's real challenge with respect to the trades is not registering more apprentices but rather increasing completion rates (cf. Jobs & Prosperity Council, 2012). Because Canada's apprentices tend to register later in life, sometimes with a family and often with previous work experience, they face a number of different barriers compared to the average PSE student. While completion rates are difficult to calculate accurately in Canada, where apprentices do not proceed through their training as a cohort and are therefore difficult to track, completion rates in Ontario fluctuated between 30.3% and 38.8% from 2000 to 2009 before attaining 46.8% in 2012 (see the description of the methodology used in Refling & Dion, 2015).

Retention of apprentices is also understood to be a problem in Australia. For the cohort of apprentices who began their training in 2008, completion rates were 45.5% for trades occupations and 55.4% for non-trades occupations (OECD, 2014). The relatively strong labour market is understood to be a complicating factor in Australia, as it encourages apprentices to change occupations before the completion of their training. Completion rates tend to be higher in the dual system countries, where the culture of apprenticeship is strong and participants tend to be younger. Completion rates in each of Germany, Austria and Switzerland are regularly between 80 and 90%.

Lessons to Learn from Expansions Abroad

This section briefly reviews the cases of Australia and England, both of which made changes in the last decades in an attempt to expand their apprenticeship systems and increase participation. While both expansions were successful in numerical terms, they also gave rise to questions about the quality of placements.

Australia: Increasing Scope

Australia underwent a process to differentiate its own apprenticeship offerings in the 1980s. While the institution of apprenticeship had traditionally been strong in Australia, it tended to be confined to a set list of trades occupations that attracted mostly male workers.

Recommendations from the Kirby Review in 1985 led to the creation of traineeships, effectively extending the apprenticeship model of on-the-job training into a variety of non-trades occupations such as retail, tourism and hospitality. While traineeships were designed to provide entry-level training for youth, they suffered from low completion rates and a poor image. In an effort to redeem the traineeship program, the apprenticeship and traineeship systems were combined in 1997 and rebranded under the common term of 'Australian Apprenticeships.' National standards for training were also created, informed by labour and industry representatives.

Apprenticeship participation grew considerably over this time, from 136,000 participants in 1995 to 413,300 in 2003, driven primarily by the creation of new apprenticeship programs targeted to different sectors. This growth shifted the system away from apprenticeships in their traditional territory of the trades toward new sectors, such that non-trades apprenticeships – what were once called traineeships – made up 68% of all contracts by 2004 (Sharpe & Gibson, 2005). These tended to be located in the clerical, sales and service industries, were often part-time, lasted less than two years and provided the apprentice with a lower-level skills qualification than trades apprenticeships.

Given the strong working-class culture in Australia, apprenticeships in the trades are often seen to be desirable positions and they are frequently required to work in the sector. Despite this, many trades report having difficulty attracting quality candidates. Traineeships are often seen to be less desirable, their image still suffering from the perceptions of poor quality that have existed since their creation in the 1980s. They are often viewed as labour market integration programs rather than skills development programs and they are not required to work in an industry (ILO & World Bank, 2013).

While the initial enthusiasm for apprenticeships seems to have waned of late, in part due to changes in the government's funding policy³, the introduction of traineeships can be said to have reached its aim of expanding the number of apprentices and introducing the apprenticeship model of learning to new areas of the economy. Australian apprenticeships are now available in more than 500 occupations in industries such as agriculture, construction, community services and health, telecommunications, engineering and mining, manufacturing and tourism. Traineeships can be found in business, retail, financial services, childcare and health sectors (OECD, 2014).

England: Maintaining Quality

England expanded its apprenticeship system in the mid-1990s to tackle a growing skills gap by providing youth with new, portable credentials in areas that were in demand on the labour market. Thanks in large part to improved marketing to the public and better business outreach, the expansion itself was ultimately successful, with the number of apprenticeship starts increasing from 65,000 in 1996 to over 500,000 in 2012 (Ayres & Gurwitz, 2014).

This expansion quickly came under criticism from a variety of angles. First, the lack of national apprenticeship legislation allowed for greater difference between programs than in other European countries, where federal regulations ensured standardization of certain core features such as duration and requirements of off-the-job training (Evans & Bosch, 2012; Fuller & Unwin, 2008). Furthermore, the lack of clear boundaries from government had let 'apprenticeship' become a catch-all term for any kind of on-the-job training (Richard, 2012). Some employers, for example, were registering current employees into their apprenticeship programs, arguing that the government should fund these individuals' development of new workplace skills despite their

³ See the Australia profile in the second part of this report for more details.

previous work experience in the area. This made it difficult to determine whether any new apprenticeship positions were being created or whether employers were simply using government funding to sponsor their employees' credentials. This seemed to defeat the initial purpose of the expansion, which was to help youth integrate into the labour market (Evans & Bosch, 2012). Finally, the educational value of some apprenticeships was questioned, as many could be completed in a very short time – one year or less – and entirely on the job, without any requirement for complementary theoretical training. If the labour market could not trust in the value of the credentials being dispensed, their transferability could also be called into question.

On the one hand, both the Australian and the English expansion projects were successful in their most basic aim, which was to grow the number of apprenticeships and to introduce the model of learning to new areas of the economy. Yet they also faced issues with quality as a result. Both cases demonstrate that expansion can be achieved by carefully marketing apprenticeship and by introducing the model to new, emerging sectors of the economy, but that precautions must also be taken to ensure the quality of the placements being offered and thus also the value and transferability of the credentials earned.

Concluding Thoughts

The following observations emerge from the preceding comparison:

- 1) The success of the dual system model of apprenticeship in Germany, Austria and Switzerland is intricately linked to historical and cultural factors that could not be emulated in Ontario. In particular, historical factors have encouraged both positive perceptions of apprenticeship and strong employer participation in dual system countries.
- 2) Though many of Ontario's international counterparts operate with similar federal systems of government, in which matters related to education typically fall under provincial jurisdiction, an examination of their apprenticeship systems finds a much closer involvement of the federal government in coordination and decision-making than we find in Ontario, especially when it comes to legislation.
- 3) While apprenticeship in Ontario is still largely restricted to the trades, other jurisdictions have expanded apprenticeship beyond this traditional sector into high-growth occupations in emerging areas of the economy.
- 4) Apprentices in Ontario tend to be older than those in Europe, which affects the challenges they face. The ILO identifies Canada and the United States as the only two countries in which apprenticeship is primarily used by adults (ILO & World Bank, 2013).
- 5) Studies have shown that the costs of apprenticeship function as a major barrier to participation in Canada, especially for older participants. Despite this, many apprentices in Ontario must pay for the in-class portion of their training, and those who do not qualify for Employment Insurance are not salaried during this time unless their employers choose to top up or pay their wages. This stands in contrast to several jurisdictions abroad, where apprentices continue to be paid while training off the job and where in-class training is often free.
- 6) Block release seems to be more common in Ontario, and Ontario's apprentices spend less time learning off the job than do apprentices in the other jurisdictions considered.
- 7) Any attempt to increase participation in apprenticeship should keep in mind the cases of Australia and England, both of which made changes in recent decades in an attempt to expand their

apprenticeship systems and increase participation. While both expansions were successful in numerical terms, they also gave rise to questions about the quality of placements. Both cases demonstrate that expansion can be achieved by carefully marketing apprenticeship and by introducing the model to new, emerging sectors of the economy, but that precautions must also be taken to ensure the quality of the placements being offered and thus also the value and transferability of the credentials earned.

This investigation has also given rise to other questions that might be considered before undertaking any reform to Ontario's apprenticeship system. The first concerns the quality of apprenticeship. We seem to know very little about how well apprenticeships prepare participants, especially youth, to have successful careers. The metrics used to gauge success in apprenticeship, which might include completion rates and employment rates after completion, tell us little about the long-term effects of apprenticeship in a world where the constantly shifting needs of the labour force require flexible and adaptable workers.

The second question concerns the relationship between apprenticeship and postsecondary education, and of the pathways between the two. The literature identified transitions from apprenticeship to postsecondary education as an area of weakness for many apprenticeship systems internationally, including in Germany, where an apprentice needs to complete extensive additional training to enter a polytechnic or a university (ILO & World Bank, 2013). We might argue that Ontario addresses this need with its Co-op Diploma Apprenticeship (CODA) programs. In France, the creation of new pathways between apprenticeship and postsecondary education did much to help fight the perception that apprenticeship was best suited for academically weak students (CEDEFOP, 2009). In a province that similarly suffers from negative perceptions of apprenticeship, an expansion of apprenticeship might consider proceeding through CODA and emphasizing its link to a well-established postsecondary credential.

The final question asks about the relation between apprenticeship and other forms of work-integrated learning (WIL) in the postsecondary sector. How could Ontario's current emphasis on WIL in general, and perhaps co-op in particular, be viewed as a competitive advantage in an expansion of apprenticeship, especially given that some occupations that are apprenticeable abroad are already part of postsecondary training here – and thus may already contain a strong WIL component? Could Ontario's current focus on WIL be serving the same function as apprenticeship abroad by similarly helping students transition to the labour market? Does Ontario's strength in WIL diminish the need to expand apprenticeship? These questions would warrant further consideration.

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Country Profiles

The profiles in this section outline the structure and governance of the apprenticeship systems in a selection of countries deemed to be informative for and relevant to the challenges that Ontario currently faces. These countries include, in order of appearance, the so-called 'dual system' countries (Germany, Austria and Switzerland), Australia, England, France and the United States.

These profiles are included to help locate the various comments and references made to these apprenticeship systems in the report in their context and to help the reader better familiarize him- or herself with the many ways in which apprenticeship systems can and do differ. Each profile is detailed without being exhaustive in its description. For this reason, references and suggestions for further reading are included at the end of each profile.

The Dual System Countries

Germany, Austria and Switzerland are often referenced collectively in the apprenticeship literature as the ‘dual system’ countries, a term which we adopt for our purposes here as well. According to Sharpe and Gibson (2005), the term ‘dual system’ primarily denotes an apprenticeship structure in which the education of the apprentice takes place both in the workplace and in a vocational school. The authors go on to suggest that this model, prototypical to Germany, was later emulated in Austria and Switzerland and now inspires a variety of countries.

This section includes a detailed treatment of German apprenticeship, followed by shorter descriptions of the systems in Austria and Switzerland.

Germany

The apprenticeship system in Germany serves two primary purposes. First, it ensures the quantity and quality of the workforce by training youth in areas of economic priority (ILO & World Bank, 2013). It also aids with the successful integration of youth into the labour market by providing them with skills that are transferable and in demand (OECD, 2014).

History

Apprenticeship in Germany has a long history that dates back to the Middle Ages, when apprenticeship was the only possible path of entry into the trades. Apprenticeships were also understood to play an important role in socializing youth who, once apprenticed, would usually live with their master and be taught good work habits. At the time, the entirety of the apprentice’s training occurred in the workplace. Regulations concerning access and working conditions were established and closely enforced by guilds, which thus came to wield considerable social and economic power (Steedman, 1993).

The economic power of the guilds began to weaken with the institutionalization of trades education and the opening up of the labour market in the mid-19th century. However, when compulsory schooling was introduced, the socializing function of apprenticeship remained sufficiently valued that a law was passed in 1869 making part-time attendance at a trade or continuation school compulsory for all employed young people. The social function once performed by the master craftsman was thus preserved and expanded beyond the trades to encompass all working youth (Steedman, 1993).

This requirement persisted as German industry developed in earnest throughout the late 19th and early 20th centuries; even as the guilds continued to lose power, youth employed by industry still had to be released during part of the day to attend a trade school. This unique progression of events, which demonstrates the fundamental value placed on the social benefits of a vocational education in Germany, also explains how, as Steedman argues, “German industry adjusted at an early stage of development to the costs and benefits of compulsory day release” (1993, p. 1282).

Governance

This history has also bequeathed a lengthy tradition of cooperation between employers, unions, schools and governments on issues related to apprenticeship. The federal Vocational Education Act

(*Berufsbildungsgesetz*, or BBiG)⁴, first introduced in 1969 and revised most recently in 2005, outlines the different training paths in apprenticeship and the responsibility of the various parties involved. It also establishes the framework for the integration of apprenticeship into the education system and regulates the content and conditions of workplace training (Bliem, Petanovitsch & Schmid, 2014; Sharpe & Gibson, 2005).

The BBiG defines apprentices as a type of employee under German law. They are represented by the unions at the workplace, have training contracts, are covered by social insurance programs, are paid a salary for attending part-time vocational school and are protected against dismissal (Lehmann, 2005).

Like Canada, Germany has a federal system of government in which education is the responsibility of the states (*Länder*). While the Federal Institute for Vocational Education and Training (*Bundesinstitut für Berufsbildung*, or BiBB) regulates the training content and conditions for occupations, the states manage the integration of off-the-job training with the education system. Local chambers of commerce are responsible for ensuring that all regulations are enforced.

The apprenticeship system in Germany is financed principally by employers, who bear the costs of apprentices' wages even during off-the-job training. While apprentices are legally considered to be employees, they are paid lower wages than other staff, effectively compensating employers for the costs incurred for training on the job. The state government bears the costs of providing off-the-job training, which is offered without cost to the apprentice.

Scope and Duration

Apprenticeships exist in close to 350 different occupations, ranging from relatively low-skilled to very highly skilled occupations (Bliem et al., 2014; OECD, 2014). This variety ensures that there are attractive apprenticeship opportunities for youth at every level of academic aptitude. Apprenticeable occupations include many in the service and administrative areas that would be part of community college training in Canada. Employment in some apprenticeable areas is restricted for individuals under the age of 18 to those who are pursuing an apprenticeship qualification, thereby providing a certain availability of positions. This also effectively limits employment options for those under 18 not participating in apprenticeship to a narrow range of unskilled occupations.

Apprentices in Germany can last from two to three-and-a-half years depending on the occupation and the qualification attained (Bliem et al., 2014; OECD, 2014). Completion of an apprenticeship depends upon passing midterm and final exams covering practical and theoretical aspects of the occupation covered in training (Lehmann, 2005).

Participation

According to data from the European Union, 48.6% of German upper-secondary school students participated in some form of vocational education or training, primarily apprenticeship, in 2012. While this value might seem impressive by Canadian standards, it marks a decrease from previous years (59.4% in 2006 and 51.5% in 2010) (CEDEFOP, 2014).⁵

⁴ See <http://www.kanada.diplo.de/contentblob/4169840/Daten/4074956/voctrainingactdownload.pdf> for an English version of the Act.

⁵ Though some have speculated that this decline might have been related to the recession, it is interesting to note that the EU average participation rate remained relatively constant over this same time period (51.7% in 2006, 49.9% in 2010 and 50.2% in 2012; CEDEFOP, 2014).

Anyone who has completed mandatory full-time schooling is free to enter an apprenticeship in Germany (Bliem et al., 2014). In practice, participation depends heavily on the streaming that occurs in the German education system. Heinz (2003, p. 27) describes the three “turning points that characterize the transitions from school to work in Germany.” Following elementary school, students are tracked based on their academic performance into either lower (*Hauptschule*), middle (*Realschule*) or upper (*Gymnasium*) secondary schools. Each of these secondary schools also varies in the length of training, based on the time required to prepare students for the next stage of life. After graduation from secondary school, the next turning point involves entering an apprenticeship or enrolling in a polytechnical college (*Fachhochschule*) or a university. The final turning point constitutes entry into the labour market after having acquired a certificate or degree. While there is some level of permeability between these pathways, apprenticeships are most common for students attending *Hauptschule*, who begin working after completing grade 9 at the age of 14 or 15 (Lehmann, 2005).

Steedman (2001) is careful to emphasize that this streaming process does not result in apprenticeship becoming the pathway to the labour market for academic low-achievers. Other work-based programs exist to these ends. Instead, it is generally recognized that good grades can attract the attention of large firms and open the door to prestigious apprenticeship opportunities. This provides students with an added incentive to do as well as possible in school, which in turn results in the overwhelming majority of students leaving high school with some form of recognized qualification. Unsuccessful apprenticeship applicants are encouraged to attend pre-apprenticeship programs in vocational colleges, where their skills can be developed further before reapplying the next year.

Awareness about apprenticeship among students is very high in Germany. Teachers take time in the closing years of compulsory schooling to discuss career options with students and to work through a collection of information packets. Students practice composing letters to firms seeking apprentices and mock interviews are organized at school. Companies visit local high schools to speak about their apprenticeship programs and offer weeklong internships as ‘try-outs’ for interested students (Parilla & Berube, 2014). An extensive network of federal employment centres (*Arbeitsamt*) engages in vocational counseling and helps students interested in apprenticeship learn more about the process and find employers. Chambers of commerce also keep a list of apprenticeship opportunities available locally that is open to prospective apprentices.

While many employers in Germany already have some kind of experience with the apprenticeship system, even if only through employees who come to them with apprenticeship credentials, several forms of support are open to them as well. For example, chambers of commerce provide employers with information about recruiting apprentices and act as a middleperson between employers seeking apprentices and apprentices seeking sponsors. Employers wishing to train apprentices must also be certified by the local chamber of commerce, which verifies whether the employer is capable of meeting the requirements for training in the occupation.

The International Labour Organisation identifies the lack of pathways between apprenticeship and higher education as a weakness of the German system (ILO & World Bank, 2013). An individual who has completed an apprenticeship generally only has two options available to them: continue training to become a master craftsman (*Meister*) or train as a technician. The path to accessing higher education at either a polytechnic or a university often involves several hours of extra study to qualify. Germany is experimenting with new options to increase access to tertiary education for apprentices (Bliem et al., 2014).

Apprenticeship Structure

German apprentices complete roughly 70% of their training on the job and the remaining 30% off-the-job on day release, one to two days a week, in vocational schools or at chambers of commerce (Bliem et al., 2014;

EC, 2013). Approximately one-third of the off-the-job training is devoted to general instruction in subjects such as language and mathematics (Sharpe & Gibson, 2005). This also includes a portion on social studies, which informs apprentices about labour laws and regulations and about their rights and responsibilities as apprentices. Vocational teachers remain in regular contact with employers about the welfare of apprentices (Lehmann, 2005).

Apprenticeship contracts provide for a trial period at the beginning of training, allowing apprentices to leave the position if they find that the subject matter is not for them. A significant portion of apprentices who terminate their contracts during the trial period re-enter apprenticeship in a different occupation or with a different firm (Stedman, 2001).

Qualifications and Completion Rates

Completion rates vary considerably between occupations and usually include the relatively higher proportion of apprentices who choose to terminate their contracts during the trial period (ILO & World Bank, 2013). For those who remain past this initial period, completion rates are often between 80 and 90%. The OECD cites the overall completion rate for German apprentices as 87% for 2011 (OECD, 2014).

According to one report from the BiBB, roughly 61% of apprentices continue working for the same employer after they have completed their apprenticeship, contingent upon the size of the company (rates are higher for larger companies) and its geographical location (higher in West and South Germany than in Eastern Germany) (EC, 2013; ILO & World Bank, 2013).

A certificate of apprenticeship (*Gesellen Brief*, literally 'journeyperson's letter') is only required by law in a limited range of occupations, such as for truck drivers, aircraft maintenance technicians and electricians. In practice, however, the image and cultural currency of apprenticeship is such that employers would generally prefer to fill a position with a certified apprentice than with another individual possessing similar skills but no apprentice credential (ILO & World Bank, 2013).

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Austria

Much like in Germany, the Austrian apprenticeship (*Lehre*) system exists to provide youth with vocational qualifications and to help them integrate into a work environment (EC, 2013).

Austria follows a federal model of government in which responsibility for apprenticeship is split between the central government and the states (*Länder*). While all forms of vocational education, including apprenticeship, are legislated and regulated at the federal level, execution is handled by state governments. Austria too has a federal Vocational Training Act (*Berufsausbildungsgesetz*, or BAG, last revised in 2012), which identifies about 200 apprenticeable occupations, lays out the required competencies and curriculum for each and regulates a number of other matters relevant to apprenticeship (Achleitner, Wallner & Schönherr, 2012; Fersterer, Pischke & Winter-Ebmer, 2008; Archan & Mayr, 2006).

Apprenticeships exist in a wide variety of areas, including rapidly developing occupations such as information technology and more traditional trades, clerical and sales professions. As in Germany, the list of occupations spans the range from low-skilled occupations to others that would require college study in other countries. In 2011, the most popular⁶ apprenticeships for men included metal technology, electrical engineering and motor vehicle engineering, while retail, office assistant and hairdresser were the most common choices for women (Achleitner et al., 2012). Austrian apprenticeships vary in length from two to four years, with three years being the average.

Students in the Austrian education system undergo a similar streaming to that described previously for Germany. Following four years of elementary school, roughly 70% of all students proceed to a lower secondary school (*Hauptschule*), while the remaining 30% enter an academic secondary school (*allgemein bildende höhere Schule*). These proportions represent national averages and distributions are more heavily weighted toward the academic track in urban centres; in Vienna, for example, over half of students attend academic secondary school (Archan & Mayr, 2006). Streams are chosen based on academic performance in primary school, the results of an entrance exam and parental choice (Fersterer, Pischke & Winter-Ebmer, 2008).

Academic high school typically lasts eight years and concludes with students writing a qualifying exam, known as the *Reifeprüfung* or *Matura*, to enter postsecondary study at universities or polytechnics (Archan & Mayr, 2006). *Hauptschule* typically lasts four years and prepares students for integration into the labour market. Students who intend to pursue an apprenticeship generally leave full-time schooling after grade 8 at age 15 and supplement their preparation with a one-year pre-apprenticeship program at a pre-vocational school. Students can also choose to enter one of several kinds of vocational schools, some of which complement vocational training with preparation for the university entrance exam (Fersterer, Pischke & Winter-Ebmer, 2008).

Roughly 40% of students in a given high school cohort enter an apprenticeship after completing compulsory schooling (Achleitner et al., 2012; Fersterer, Pischke & Winter-Ebmer, 2008; Archan & Mayr, 2006). While apprenticeship participation is high in Austria, with 39% of the Austrian workforce naming apprenticeship as their highest level of education in 2011, the postsecondary graduate rate is quite low compared to other OECD countries (Achleitner et al., 2012; Hoeckel, 2010). While 63% of the Austrian working age population had completed upper secondary school in 2004, only 18% possessed a postsecondary credential (Archan & Mayr, 2006). The wide range of pathways through vocational education is partly responsible for this, including some that allow individuals to train in professions like nursing that would require a postsecondary credential elsewhere.

The BAG mandates the creation of a number of apprenticeship offices (*Lehrlingsstellen*) to provide advisory services on education and careers, especially in relation to apprenticeship opportunities (Archan & Mayr, 2006). These offices act under the delegated authority of the Ministry of Economy to connect apprentices and employers, organize apprenticeship-leaving exams, award qualifications and otherwise support the parties involved in apprenticeship training.

The apprenticeship offices also oversee companies training apprentices and ensure that they have the appropriate infrastructure to do so effectively (Fersterer, Pischke & Winter-Ebmer, 2008). Those companies that cannot meet training requirements because they are either too small or too specialized to offer the necessary range of training activities might team up with other employers to form a training alliance and share

⁶ Measured as a percentage of the total number of apprentices.

apprentices (Hoeckel, 2010). A number of tax deductions and subsidies are available to training employers, including some to incentivize the hiring of women and persons with disabilities (Achleitner et al., 2012; Archan & Mayr, 2006).

Apprentices sign a contract at the beginning of their training and become employees, paid a wage that is negotiated in collective bargaining⁷ and rises with experience. The profile of each occupation and the list of competencies to be acquired are set out in a government ordinance developed in consultation with the various social partners, including employers, unions and chambers of commerce (Hoeckel, 2010). Apprentices spend about 80% of their time learning on the job and the remainder training part-time, either on day or block release, in a vocational school dedicated to apprentices (*Berufsschule*). In addition to this, some firms also choose to send their apprentices to external training centres or organize joint courses with other employers to provide further in-class training on other aspects of the occupation (Achleitner et al., 2012; Fersterer, Pischke & Winter-Ebmer, 2008).

Upon completion of their apprenticeship, apprentices must write an exam containing both practical and theoretical components to demonstrate their knowledge of the required skills. Those who pass can begin working, continue studying to pursue a master craftsman's certification or work to access postsecondary study (Achleitner et al., 2012; Archan & Mayr, 2006). Students who fail the exam can repeat it after three months; more than 90% of apprentices eventually pass. Overall apprenticeship completion rates in Austria are around 80% (Fersterer, Pischke & Winter-Ebmer, 2008).

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⁷ In the absence of a collective bargaining agreement, wages are negotiated as part of the apprenticeship contract. Apprentices' wages generally reach about 80% of a regular worker's wage in the final year of the contract (Achleitner et al., 2012).

Switzerland

Apprenticeships in Switzerland also follow the dual system, which combines part-time study at a vocational school with on-the-job training with the employer. Its purpose is to help youth integrate into the labour market while ensuring a constant supply of qualified professionals and managers (OECD, 2014).

The federal legislation governing apprenticeships (*Loi sur la formation professionnelle*, or LFPPr) was revised in 2002 to modernize the institution of apprenticeship (*apprentissage*) and ensure the continued link between training and the demands of the labour market. Measures were introduced to promote apprenticeship, to create new apprenticeship opportunities aligned with emerging labour market needs and to create new pathways from apprenticeship into the rest of the vocational and postsecondary education system (OECD, 2014).

While education is traditionally the responsibility of the cantons in Switzerland, apprenticeship and other forms of vocational education and training are managed collaboratively by the federal and canton governments with considerable input from employers, unions and trade organizations mandated by law (Hoeckel, Field & Grubb, 2009).

Swiss apprentices can choose from approximately 230 different occupations, with training periods typically lasting from two to four years (Bliem et al., 2014; OECD, 2014; Hoeckel, Field & Grubb, 2009). Students are informed about apprenticeship opportunities during their compulsory schooling. Internships with sponsoring companies are also available for interested students (OECD, 2014).

About one-third of Swiss companies offer apprenticeships, with this proportion increasing with the size of the company. All vocational teachers at schools, employer sites and industry training centres must be certified by a federal agency (Hoeckel, Field & Grubb, 2009). No government subsidies exist either for apprentices or for sponsor companies in Switzerland except in rare circumstances of demonstrated need.

Apprentices' wages are set through collective bargaining, as in Germany and Austria, and rise with experience. Apprentices typically either spend four days a week on the job and one day in class, or alternate weeks between school and work (three weeks at work and one week in class per month). Some Swiss apprentices also begin their training entirely in school and gradually transition to the workplace as their program progresses. As in Austria, Swiss apprentices often attend industry-specific courses at an employer-sponsored training centre in addition to their vocational school training to develop complementary practical skills (Hoeckel, Field & Grubb, 2009). Apprenticeship completion rates are generally high in Switzerland, reaching 88% in 2012-2013 (OECD, 2014).

Switzerland differs from Germany and Austria in the strength of its 'tertiary B' sector, which contains a number of high-quality but non-academic tertiary vocational institutions offering programs of higher vocational training. While apprenticeship completers in Germany and Austria may find their pathway options for further study restricted, these institutions can offer attractive routes of progression for Swiss apprenticeship graduates, thereby encouraging permeability between pathways.

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Australia

The Australian apprenticeship context is of particular interest to Ontario given the pace of reforms over the last 30 years. Roughly one-quarter of participants in Australia's well-developed vocational education and training system are registered in apprenticeships, primarily in the trades, or in shorter traineeships in other, often service-oriented occupations (McDowell et al., 2011). Apprenticeships serve several interrelated purposes, including the development of skills for industry and the integration of youth into the labour market.

History

The Australian apprenticeship system was imported from the United Kingdom and began with the first permanent European settlement in 1788. It has undergone significant change since the end of the Second World War. For example, recommendations from the Kirby Review in 1985 led to the creation of traineeships, effectively extending the apprenticeship model of on-the-job training into a variety of non-trades industries such as retail, tourism and hospitality. While traineeships were designed to provide entry-level training for youth, they suffered from low completion rates and a poor image. In an effort to redeem the traineeship program, the apprenticeship and traineeship systems were combined in 1997 and rebranded under the common term of 'Australian Apprenticeships.'

Participation in apprenticeships and traineeships increased considerably following the introduction of Australian apprenticeships, with the creation of new incentives for participation in the face of high youth unemployment. Access to apprenticeship was expanded to include workers of all ages, including those still in school as well as part-time and casual workers. The qualifications framework that includes apprenticeships was established in 1995 to shift from one that focused on time served to a competency-based model in vocational education and training. National standards for training were created, informed by labour and industry representatives. Reforms also opened the door to the establishment of private training providers, ending government monopoly on in-class vocational training.

Apprenticeship participation grew considerably over this time, from 136,000 participants in 1995 to 413,300 in 2003, driven primarily by the creation of new apprenticeship programs targeted to different sectors (Sharpe & Gibson, 2005). This growth shifted the system away from apprenticeships in their traditional territory of the trades toward new sectors, such that non-trades apprenticeships – what were once called traineeships – made up 68% of all contracts by 2004 (Sharpe & Gibson, 2005). These tended to be located in the clerical, sales and service industries, were often part-time, lasted less than two years and provided the apprentice with a lower-level skills qualification than trades apprenticeships. Participation in these areas also shifted toward females and older workers.

In recent years, however, participation in apprenticeship has dropped by roughly one-quarter from its peak in 2012 to 392,200 in 2013. The great majority of this drop came in non-trades occupations, continuing a broader trend that has seen traineeship starts drop by 77.2% from 2003 to 2013 (NCVER, 2014a). This decrease in popularity coincides with a government decision to end subsidies for certain types of traineeships after a commissioned review of Australian apprenticeships suggested that the government "review its economic contributions to the Australian apprenticeship system" and fund only those traineeships that furthered certain discrete government objectives (McDowell et al., 2011).

Governance

Control of all vocational education and training in Australia has shifted from the state to the national level since the 1990s, especially with the creation of a national competency-based system of qualification to recognize vocational achievements (Hoeckel, Field, Justesen & Kim, 2008). The national government, mainly through the Department of Industry, continues to play a major policy role in apprenticeship and is largely responsible for financial incentives and support services directed at participants. All apprenticeship and traineeship contracts must still be registered with a State Training Authority (STA), however, and states remain the primary source of funding paid to public and private Registered Training Organizations (RTOs), which offer the in-class portion of apprenticeship training (OECD, 2014). The public vocational education and training system, which is delivered through 59 Technical and Further Education (TAFE) institutes, is also funded at the state level.

Scope and Duration

Australian apprenticeships are available at a variety of certificate levels in more than 500 occupations in industries such as agriculture, construction, community services and health, telecommunications, engineering and mining, manufacturing and tourism. Traineeships can be found in business, retail, financial services, childcare and health sectors (OECD, 2014). The list of apprenticeable occupations is determined at the state level with input from industry and credentials are recognized nationally. Some occupations, especially in the trades, require the completion of an apprenticeship to practice in addition to certification through licensing exams. There are no licensing requirements associated with traineeships.

While traineeships typically last one to two years, apprenticeships are longer, often three or four years (OECD, 2014; ILO & World Bank, 2013).

Participation

Given the strong working-class culture in Australia, apprenticeships in the trades are often seen to be desirable positions and they are frequently required to work in the sector. Despite this, many trades report having difficulty attracting quality candidates. Traineeships are often seen to be less desirable, their image still suffering from the perceptions of poor quality that have existed since their creation in the 1980s. They are often viewed as labour market integration programs rather than skills development programs and they are not required to work in an industry (ILO & World Bank, 2013).

Individuals must be aged at least 15 years to participate in an Australian apprenticeship. There is no maximum age. Students can begin apprenticeships while still in school in one of two ways: either on their own, by finding a part-time apprenticeship opportunity while continuing to study full-time (these are especially common in retail and hospitality), or through a school-based apprenticeship program (ILO & World Bank, 2013). As a result, apprenticeships are generally promoted through the school system, though the number of students undertaking school-based apprenticeships remains low.

A national network of Australian Apprenticeship Centres provides prospective apprentices with information, administrative assistance and other forms of support. They can also help connect apprentices and employers (OECD, 2014). The Australian Government has recently announced its intention to replace the Australian Apprenticeship Centre with a new Australian Apprenticeships Support Network, which would perform similar functions, as of July 2015 (Australian Government, 2014a).

Various incentives exist to encourage employer participation in apprenticeship. The national government pays employers up to \$4,000 per apprentice or funded trainee they take on. Those employers that are also registered as RTOs (that is, that have been certified to provide the off-the-job portion of training on-site) can claim a separate amount to fund their training endeavour. In both cases, the Australian government reports that many employers do not request these incentives, “finding the system too complex to negotiate and preferring to remain independent of government funding” (ILO & World Bank, 2013).

Apprentices seeking employers can also sign a training contract with one of several Group Training Organisations (GTOs), which then places the apprentices with ‘host’ employers to undertake the on-the-job portion of their training. This allows the apprentice to rotate between different kinds of sites in their area of training, gaining exposure to different work environments and different tasks. It also gives small and medium-sized businesses access to apprentices whom they might not otherwise be able to support on a full-time basis.

The Australian government has also created a new system of support loans for apprentices similar to those available to students in postsecondary education. Introduced in July 2014, the program helps students cover the day-to-day costs of completing an apprenticeship. Loan amounts can rise to AUD \$20,000 over four years and are income-contingent, only requiring repayment once an apprentice’s annual income reaches AUD 51,309 (OECD, 2014).

Apprenticeship Structure

Australian apprentices receive both theoretical (20% of their time) and practical training (80%) in their occupation. While the practical training occurs on the job, the theoretical component can take place in one of several ways. Many apprentices attend a publicly funded Technical and Further Education (TAFE) institute. While off-the-job training traditionally occurred on day release, the apprenticeship system has evolved to become flexible in this respect, such that block release and online options are now available. Theoretical training can also be provided at the workplace by a trainer from a Registered Training Organisation (RTO) (ILO & World Bank, 2013). There are currently over 4,000 RTOs in the private sector alone, the result of government policies designed to open vocational training up to competition (ILO & World Bank, 2013; Hoeckel, Field, Justesen & Kim, 2008). While most private RTOs are commercial enterprises, others are non-profit and run by community or welfare organizations. In addition, some 250 companies are registered as ‘enterprise RTOs,’ giving them the right to provide both the theoretical and practical components of an apprentice’s training (ILO & World Bank, 2013).

The training provider is considered to be a partner in the apprenticeship. All apprenticeships must include a training plan, which is created by the RTO and sets out the list of competencies that must be achieved (OECD, 2014). The RTO must also sign the apprenticeship contract together with the apprentice and the employer. Contracts must be registered with the state training authority within three months of the beginning of training. Wages are paid according to industrial relations agreements (ILO & World Bank, 2013). While companies can technically pay apprentices a reduced trainee wage, in recognition of the fact that roughly 20% of their time is spent training off the job, some employers pay more to attract and retain quality candidates. In some industries, such as meat packing, a majority of workers may be employed as trainees. In others, such as fast food, traineeships can be used as a promotion route to management (ILO & World Bank, 2013).

An apprenticeship ends when the RTO, the employer and the apprentice agree that the competencies set out in the training plan have been acquired. The RTO then issues the qualification and informs the STA that the

apprenticeship has ended. In licensed trades, the apprentice must then also meet the requirements of the relevant state licensing authority before being allowed to work as a qualified tradesperson (OECD, 2014).

Qualifications and Completion Rates

All Australian apprenticeships and traineeships have a qualification outcome (ILO & World Bank, 2013). On the ten-point Australian Qualification Framework (AQF), apprentices and trainees can earn credentials between levels 1 and 6, depending on the occupation and the type of training.

Retention of apprentices is understood to be a problem in Australia. For the cohort of apprentices who began their training in 2008, completion rates were 45.5% for trades occupations and 55.4% for non-trades occupations (OECD, 2014). These values rose slightly for apprentices who began their training in 2009 (NCVER, 2014b). Completion rates vary by occupation; while particularly poor for hairdressers and chefs, they are much higher for cleaners and care workers, for example (ILO & World Bank, 2013).

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England

This section deals specifically with the apprenticeship system in England, which differs slightly from that of its partners in the United Kingdom.

Since 2000, the UK government has sought to improve several aspects of its vocational education and training program to address both perceived skills gaps and high youth unemployment.

History

As with many European countries, apprenticeship in England has a long history that dates back several centuries. By the 1960s, there were 240,000 apprentices in Britain and apprenticeships were well respected as a quality form of vocational training. By 1990, however, the number of apprentices had dropped to 53,000, a by-product of increasing participation in postsecondary education and the decline of industries, such as manufacturing, that had traditionally participated in the apprenticeship system (Evans & Bosch, 2012). The rebranding of apprenticeships as Modern Apprenticeships in 1995 was designed to revive the institution and initiated a series of further changes to the system. For example, the National Apprenticeship Service (NAS) was created in 2009 to hold responsibility for the delivery of apprenticeships in England and to encourage growth in the number of programs, and 2011 saw the introduction of the Specification of Apprenticeship Standards for England (SASE), which laid out the minimum requirements for apprenticeship programs, including the minimum number of teaching hours and the need for apprentices' fees (ILO & World Bank, 2013).

In response to employer demand for entry-level workers in lower-skilled areas of the economy, level 2 apprenticeships were introduced in 2000. Previously, apprenticeships had only been available at level 3 of England's National Qualifications Framework, which is roughly equivalent to the qualifications obtained by a student who remains in full-time education until age 18. Level 2 apprenticeships, which have lower requirements for entry and are roughly equivalent to the qualifications obtained by a student who remains in full-time education until age 16, served the purpose of expanding participation in the program. The intervening years have also seen the introduction of 'higher apprenticeships,' which offer a qualification equivalent to a sub-bachelor's degree (ILO & World Bank, 2013). Amidst this complexity, the important point is that the differentiation in credentials that could be obtained through an apprenticeship in turn allowed for increased participation in the apprenticeship pathway.

The purpose of the expansion of apprenticeship in the mid-1990s was to tackle the skills gap by providing youth with new, portable credentials in areas that were in demand on the labour market. Thanks in large part to improved marketing to the public and better business outreach, the expansion itself was ultimately successful, with the number of apprenticeship starts increasing from 65,000 in 1996 to over 500,000 in 2012 (Ayres & Gurwitz, 2014). The next round of reforms, with the creation of the NAS in 2009 and the SASE shortly thereafter, was intended to address issues related to quality that had risen as England had aggressively sought to expand the number of employers and industry areas participating in apprenticeship. Some employers, for example, were registering current employees into their apprenticeship programs, arguing that the government should fund these individuals' development of new workplace skills despite their previous work experience in the area. The educational value of some apprenticeships was questioned, as many could be completed in a very short time – one year or less – and entirely on the job, without any requirement for complementary theoretical training. For lack of clear boundaries from government, 'apprenticeship' had come to be used as a catch-all term for any kind of on-the-job training (Richard, 2012).

In June 2012, the English government commissioned a review of apprenticeships to ensure that the new system was meeting the needs of the changing economy (HM Government, 2013). Completed by Doug Richard and thus dubbed the Richard Review, the evaluation made a number of recommendations, including: a) that apprenticeships should only be targeted at those who are new to a job; b) that the focus of apprenticeship should be placed on the competencies required to perform an occupation and linked to an industry standard; c) that apprenticeships include general education requirements for the development of English literacy and math skills; and d) that the competencies of apprentices should be rigorously and independently assessed prior to the completion of training (HM Government, 2013). Many of these recommendations are expected to be implemented in the coming years (OECD, 2014).

Governance

With no equivalent to a national apprenticeship act underpinning apprenticeship in the UK, government is free to legislate changes to the system at will and to shift the definition of apprenticeship as the economy requires (Fuller & Unwin, 2008). While this grants the government added flexibility that might not exist in other countries, it can create confusion and make it difficult to craft a consistent message for the promotion of apprenticeship to employers and the public.

Scope and Duration

There are over 250 apprenticeship frameworks in England covering over 1,400 job roles in a wide range of skills levels and occupations. Another 100 frameworks or so are said to be under development (ILO & World Bank, 2013). While apprenticeship length is at the discretion of the employer, making many quite short (12-18 months), the government has recently moved to legislate a minimum length of one year (Steedman, 2001). In practice, apprenticeships can last between one and four years (OECD, 2014). Apprenticeships are also mandated to include a minimum number of guided learning hours, which would be equivalent to the in-class portion of training elsewhere. This number is set at 280 for level 3 apprenticeships but varies with the level of the training (ILO & World Bank, 2013).

The English government has sought to establish apprenticeships in a variety of high-growth and high-demand industries such as information technology, finance, legal services and digital media. Apprenticeships in business administration, retail and health care have seen particular popularity of late, making up three-quarters of starts in the 2012 academic year. Engineering also made up 13% of starts during this same time frame. The top five fields for apprenticeship starts in 2012 were health and social services, including health care assistants and social service officers; customer service; management, including floor managers and help desk managers; business administration, including office supervisors and legal secretaries; and hospitality and catering, including receptionists and hotel managers (Ayres & Gurwitz, 2014).

Participation

Apprentices are treated as employees holding paid jobs that contain a learning component. As Evans and Bosch (2012, p. 20) describe, “it is often difficult to differentiate between apprenticeships, on-the-job training and labour market programmes in Britain and the use of the term apprenticeship is often confusing, cosmetic and objectionable.”

Candidates can find information on apprenticeships through the National Careers Service, which gives general advice on careers, skills and the labour market. The National Apprenticeship Service (NAS) also works with various organizations, providing career advice to ensure that prospective candidates have an understanding of what will be required of them and what employers will be looking for. Candidates can apply

for apprenticeships directly with employers or training providers and consult an online directory of apprenticeship opportunities (OECD, 2014). A company that wants to hire an apprentice can download a toolkit from the NAS website with information about the process. A hotline is also available to provide real-time assistance (Ayres & Gurwitz, 2014).

While apprenticeship used to be restricted to younger candidates, it is now considered to be an all-ages program. Government funding of apprenticeship is related to the age of the candidate. While apprenticeships are fully funded (and thus free) for participants aged 16 to 18, the government pays 50% of costs for apprentices 19 to 25 and 40% for those aged 25 and above. In all cases, employers are responsible for wages, which are not subsidized by government (OECD, 2014). While there is no necessary link between age and qualification, apprentices aged below 18 generally pursue level 2 apprenticeships and those over 18 pursue higher-level apprenticeship qualifications (ILO & World Bank, 2013). Though roughly 40% of new apprentice in England were aged over 25 in 2010-2011 (with 30% of those over 45), many apprentices in this situation are 'conversions,' that is, people who were already employees and whose job title has since been changed to 'apprentice' in an attempt to elevate their skills (ILO & World Bank, 2013). In many other countries, these individuals would be considered work-based learners engaged in a form of continuing education.

Pathways also exist for individuals to access apprenticeship without being employed, for those who wish to continue studying for example. Apprenticeship Training Agencies (ATA) were created to cater to this group of individuals as well as to support small employers who wish to offer apprenticeship but may not be able to provide all of the activities required in a training profile. The ATA acts as an apprentice's employer and places him or her in a succession of work environments to gain experience in a range of settings. The ATA receives a fee from the employers and in turn pays the apprentice's salary (ILO & World Bank, 2013).

Apprenticeship Structure

The English system allows for considerable flexibility in the delivery of apprenticeship so long as the desired competencies are developed. As a result, one can only discuss the structure of English apprenticeship in terms of general practices.

Apprentices do generally split their time between on-the-job development and training, the latter of which is offered by over 1,100 registered providers including colleges, work-based learning providers, charities, training agencies and universities. This training can take a number of forms, such as individual or group teaching, coaching, distance or online learning, guided study or mentoring. Some kind of formal assessment generally follows training and results are measured against occupational standards set out in the relevant apprenticeship framework (OECD, 2014; ILO & World Bank, 2013).

Qualifications and Completion Rates

Apprenticeships in England lead to a series of vocational credentials known as National Vocational Qualifications (NVQs). To achieve an NVQ, candidates must demonstrate that they can perform an occupational task to a set industry standard. The list of NVQs is long, topping over 1,000, and apprentices can earn more than one depending on their field (ILO & World Bank, 2013).

The lengthy list of NVQs ensures that every apprentice will leave training with a recognized and transferable credential. The narrow description of tasks contained in some NVQs, however, has led critics to question their real transferability on the labour market. Others have criticized the assessment of NVQs which, first, occurs by the employer on the job and, second, minimizes the contribution of theoretical learning by basing

assessment entirely on practical components (Steedman, 2001). Reforms have been proposed to address both of these challenges by making the assessment process more objective as well as by creating new transferable skills-related NVQs for literacy and math skills (HM Government, 2013).

Apprenticeship completion rates in England have improved considerably in recent years, rising from 37% in 2004-2005 to 74% in 2009-2010 due in part to increased attention to apprentice selection and more intense inspection of training providers (ILO & World Bank, 2013). The OECD reports English completion rates at 72.3% between August 2012 and July 2013 (OECD, 2014).

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France

The primary objective of the French apprenticeship system is “to facilitate young people’s transition from school to work by allowing those aged between 16 to 26 years to obtain certification-based professional qualifications” (ILO & World Bank, 2013).

History

While the institution of apprenticeship has a long history in France, the laws regulating the modern system and creating the network of state apprentice training centres (*centre de formation d’apprentis*, or CFA) were only passed in 1971. Faced with high youth unemployment in the early 1990s, the French government decided to relaunch the apprenticeship system with the objective of significantly increasing the number of youth who obtained a vocational qualification within five years. The Social Cohesion Plan (*Plan de cohésion sociale*) passed in 2005 similarly set a target of 500,000 youth in apprenticeship by 2009 and included provisions to improve the status of apprenticeship and modernize the system (CEDEFOP, 2008). In the interim, laws were also introduced in 2002 to provide apprentices with guarantees concerning work duration and security as well as wages, and to extend apprenticeship through a new ‘junior apprenticeship’ category open to those as young as 14 (ILO & World Bank, 2013).

Finally, new laws passed in March 2014 reinforced the role of regional governments in collecting and distributing apprenticeship taxes, reaffirmed that apprenticeships should be without cost to the apprentice and instituted new quality assurance measures (OECD, 2014).

Governance

The apprenticeship system in France involves a sustained partnership between employers and federal and regional governments. While employers are responsible for wages and support the CFAs through taxation, regional governments also fund CFAs and federal spending covers exemptions from social security contributions for companies that employ apprentices. The input of unions and employer associations is sought to inform decision-making and the various social stakeholders in apprenticeship are also represented on the governing boards of local CFAs (CEDEFOP, 2008).

Scope and Duration

Apprentices in France pursue their training in one of two ways. The apprenticeship contract (*contrat d’apprentissage*) is meant to enable youth aged 16 to 26 to obtain a vocational credential. It typically lasts from one to three years. The professionalization contract (*contrat de professionnalisation*), on the other hand, allows participants either to pursue a vocational qualification or to supplement their training with an additional credential. Participants in this category still tend to be young – 80% are under 26 – and these contracts are often short, typically six to 12 months in length, though they can be extended up to 24 months (EC, 2013).

Based on 2011 data, 23.2% of apprenticeships lasted one year or less, 27.6% 13 to 23 months, 38.8% 24 months and 10.5% 25 months or more (OECD, 2014).

Participation

French students have a number of vocational pathways available to them after they complete junior high school, typically at age 15. Some attend either a general or a technical senior high school (*lycée*) for three

years, while others will attend a vocational high school to earn either a two-year certificate of professional aptitude (*certificat d'aptitude professionnelle*, or CAP) or a vocational education certificate (*baccalauréat d'éducation professionnelle*, or BEP), or a three-year secondary vocational diploma (*Bac Pro*). Each of these vocational education options includes a work placement and is designed to make students employable upon completion. Instead of entering a vocational high school, students may also choose to enter an apprenticeship after junior high school. A 2008 report from the European Centre for the Development of Vocational Training (CEDEFOP) suggests that in previous years roughly 7% of French students opted for apprenticeship after junior high school. Regarded as a form of initial training, numerous pathways exist from apprenticeship into other secondary and postsecondary credentials. The creation of these pathways in the 1990s did much to help improve the image of apprenticeship, which had until then often been viewed as a destination for “the rejects of the school system” (CEDEFOP, 2008; Steedman, 2001).

While exceptions can be made, apprenticeship in France is primarily aimed at youth age 16 to 25 (OECD, 2014). However, strict divisions between public and private in French culture mean that French students will hear little about apprenticeship from teachers (Steedman, 2001). A variety of other resources exist, including chambers of commerce, CFAs and local career guidance offices.

CFAs also play an important role in connecting apprentices and employers. Any employer in France is eligible to hire apprentices and is encouraged to do so through taxation (OECD, 2014). French companies are asked to devote a certain percentage of their payroll value to training, of which a further percentage must be earmarked for apprenticeship, or be taxed the difference (OECD, 2014; Sharpe & Gibson, 2005). Companies that train a specific number of apprentices are then exempt from the tax (Steedman, 2012).

Apprenticeship Structure

As in Germany, French apprentices possess the same legal rights and protections under collective bargaining agreements as other employees. Apprentice salaries are set in collective bargaining agreements as a percentage of the minimum wage that rises with experience.

Apprentices spend between 60 and 75% of their time on the job and the remainder in courses at a CFA, with one week in class and three weeks on the job each month. Two-thirds of off-the-job training is devoted to general education in subjects such as French, math, languages, history, geography and sports, while the remaining third focuses on practical education in the area of qualification. Throughout their contracts, apprentices are monitored by a dedicated tutor, an employee of the CFA charged with following up on the apprentice's training and progress, ensuring the complementarity and educational value of on-the-job and class training, and managing communication between the apprentice, the employer and the CFA (OECD, 2014; ILO & World Bank, 2013).

Qualifications and Completion Rates

According to one study, 17% of 2004 junior high school graduates who opted for apprenticeship left their program before completing it, though this rate varied considerably by occupation and by employer size (OECD, 2014).

Outcomes for apprenticeship finishers are also good. Sixty-nine percent of apprentices who completed their training in the summer of 2011 were employed when surveyed seven months after completion (OECD, 2014).

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United States

The American context is of particular interest for this study given its similarity to the Canadian situation, both in terms of the general structure of the apprenticeship system and the challenges that it faces.

The stated goals of the U.S. apprenticeship system are to increase the skills of workers and the competitiveness of the economy (ILO & World Bank, 2013). In contrast to much of the literature on European apprenticeship, research on the American system is less descriptive when discussing the purpose of apprenticeship and more prescriptive, looking forward to the benefits of an expanded apprenticeship system. The potential of expanded apprenticeship for addressing postsecondary achievement gaps in both gender and race is lauded (Lerman, 2014), as is its track record abroad for easing youth unemployment (Ayres & Erickson, 2014; Lerman, 2012).

History

Three types of apprenticeship exist in the United States. Registered apprenticeships are overseen and governed by the U.S. Department of Labor's Office of Apprenticeship. A number of companies also run apprenticeship programs that are not registered with the U.S. government; their number is uncertain by definition and little is known about them (Lerman, 2014; 2012). Finally, in an attempt to increase youth participation in apprenticeship, a small number of states – notably Georgia and Wisconsin – have created youth apprenticeship programs to target high school students. The registered apprenticeship system, which includes the largest and most common type of apprenticeship in the US, was created in 1937 under the National Apprenticeship Act (OECD, 2014).

The US is currently in a period of expansion, looking to double the number of apprentices over the course of the next five years (Ayres & Erickson, 2014).

Governance

While the British government spends the equivalent of US\$1.7 billion annually on its apprenticeship system, the US spends less than US\$30 million to supervise, market and regulate apprenticeship within its border (Lerman, 2014), making the system both relatively small and largely outside the purview of government. The registered apprenticeship system in the United States is overseen by the U.S. Department of Labor's (DOL) Office of Apprenticeship (OA), which works together with independent State Apprenticeship Agencies (SASs) to administer programs and establish guidelines (OECD, 2014; ILO & World Bank, 2013). While the OA registers programs and apprentices in 25 states, the SASs directly register programs and apprentices in the remaining 25, under the oversight of the DOL. Together, the DOL and the SASs award certificates of completion, conduct outreach to sponsors, monitor programs for compliance and quality assurance, and build partnerships with employers, education providers and apprentices (OECD, 2014).

Scope and Duration

While the Office of Apprenticeship reports that the registered apprenticeship system includes over 1,000 occupations, many of these occupations overlap and cover only a small segment of jobs in the relevant profession. Apprenticeship in the United States is very closely associated with the trades, and five of the six apprenticeable occupations with the most apprentices in 2007 were linked with the construction industry (electrician, carpenter, plumber, construction craft labourer and pipe fitter). The construction industry also includes 36% of apprentice employers and over 50% of apprentices (ILO & World Bank, 2013). Registered

apprenticeship programs exist in other industries, including manufacturing, utilities, health care, social assistance, public administration, transportation, education, hospitality, retail, IT and energy (OECD, 2014).

The minimum duration of a registered apprenticeship program is set at one year or 2,000 hours. Beyond this, the actual length of training depends on the complexity of the trade. Most apprenticeship programs last from one to six years, though three to four years is more typical (OECD, 2014). The shorter apprenticeships tend to be found in lower-wage occupations such as long-term health care, while the three- to four-year range is common in manufacturing and construction (ILO & World Bank, 2013).

Participation

Participation in apprenticeship is permitted beginning at age 16 for most occupations, or at age 18 for those deemed hazardous (OECD, 2014). However, with the exception of a few states like Georgia and Wisconsin, the American apprenticeship system is almost entirely divorced from the high school system (Lerman, 2014). As a result, apprentices tend to be older. Only 20% of apprentices are under the age of 25 and the average age is in the late 20s (OECD, 2014; ILO & World Bank, 2013; Lerman, 2012).

Apprentices can enter a registered apprenticeship program in a number of ways. Pre-apprenticeship programs and other preparatory programs such as Job Corps and Youth Build have agreements with registered apprenticeship programs and feed them prospective apprentices. Employers also advertise apprenticeship positions publicly through the channels typically used to fill vacancies (OECD, 2014).

Lack of information is frequently identified in the literature as a barrier to participation in apprenticeship both for employers and for apprentices. On the one hand, little effort has been made to promote apprenticeship, while alternative postsecondary paths receive heavy subsidies from government. As a result, community colleges have all but replaced apprenticeship as the preferred form of training for middle-skilled jobs (Lerman, 2012). Most Americans know very little about apprenticeship and those more familiar with the concept often associate them with the construction industry and/or consider them anachronistic. On the other, because relatively few employers offer apprenticeship programs, most employers are unlikely to hear about apprenticeship from other employers or from apprentices (Lerman, 2014). Finally, while some states have created tax credits to encourage the hiring of apprentices, no incentives exist at the federal level (OECD, 2014).

Apprenticeship Structure

Apprentices alternate between learning on the job and in the classroom. Roughly 80% of the training takes place on the job, with at least 144 hours of classroom instruction expected per year. Many apprentices work throughout the week and complete their in-class training in the evenings or on weekends. In-class training can be provided in a number of ways. While one-quarter of employers provide the off-the-job component of apprenticeship programs themselves, community, technical and for-profit colleges also commonly offer training to apprentices, as do high schools (ILO & World Bank, 2013). Off-the-job training can also be completed online.

Apprentices are paid employees. While the apprentice must receive at least the federal minimum wage, the specific salary is at the discretion of the employer (OECD, 2014). These wages must also increase by law as the individual progresses through the program. While the employer pays for apprentices' on-site training in addition to wages, apprentices frequently pay to complete the in-class portion of their program (OECD, 2014).

Qualifications and Completion Rates

Upon completion of their training, apprentices receive a nationally recognized and industry-issued certificate that demonstrates occupational proficiency. Some apprenticeship programs also provide participants with the opportunity to simultaneously receive secondary or postsecondary degrees. Articulation agreements exist between certain apprenticeship programs and colleges to create pathways for future study (OECD, 2014). Apprenticeship completion rates were reported at 44% for the 2013 fiscal year.

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