Comparing Outcomes: Apprenticeship in Canada, the United States, and Australia

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1. Introduction

According to the labor theory of economics, individuals are paid their marginal value product—the extra amount of value that they contribute to the production process. This productive value has two critical components: genetic and environmental. No one can argue that the skills of a Tiger Woods or a Tom Hanks are at least partially, if not largely, the result of inherent skill. No amount of practice will allow the average person to strike a golf ball with the ease and precision of a Tiger Woods or slip so gracefully into character as a Tom Hanks. Coupled with this genetic disposition are also years of training, which provide both general and specific skills. General skills are those skills that can be taken from firm to firm, while specific skills are those that are so specific to a particular firm that they cannot be readily transferred.

Becker (1964) agrees with Pigou (1912) that firms will not offer general skills training, as individuals are already paid their marginal value product. Instead, the benefit will accrue to the workers because they can take this knowledge elsewhere and produce a higher amount at another firm. However, specific-skills training will be offered, as use of these skills accrue benefits solely for the worker when he is employed for the firm that provides this training. Becker argues that such specific skills will, therefore, be provided by the firm because the higher wages commanded by the worker will only be realized through employment at the firm, thus encouraging the individual to stay until the initial investment is recouped.

On the other hand, general skills enhance the labor productivity of the worker in any position and thus will raise wages for the worker regardless of where he or she works. The firm has no incentive to provide training in
these skills because once the worker is trained, there is no incentive for the worker to stay. The worker will be rewarded with higher pay even if he or she moves to a different firm. The worker thus has an incentive to pursue such training either through formal education (e.g., university) or through an apprenticeship program. The apprenticeship system will, therefore, exist only insofar as the workers would be willing to accept a lower wage during their initial period of employment in exchange for general-skills training.

Acemoglu and Pischke (1999), however, provide a different explanation in the context of imperfect labor markets. When labor mobility is limited, firms will tend to invest more in training. The presence of labor unions will enhance this effect. Since all journeymen in a unionized industry earn similar wages, there is little incentive to move from firm to firm, thus increasing the likelihood that individuals will stay with a firm, enhancing the value of training.

Indeed, the shift of training costs to the firm from the individual is a fairly new phenomenon as apprentices often paid for their own training when the practice was first undertaken during the Middle Ages. This changed as schooling became more important in determining wages and there was a gradual shift towards university education as a mechanism for social and economic advancement. Despite this, even today, apprentices in the building trades receive paid training, and full journeymen in the building trades earn more than the average college degree holder. Some training programs are performed in conjunction with two-year college programs. Entrance into the trades requires considerable training and academic qualification, yet construction workers are often not appreciated in terms of the rigor required.

Much of the comparative work on apprenticeship has focused on the German versus American models. In the USA, workers have a high mobility/low training equilibrium with little influence of labor unions, while the German model has a low mobility/high training equilibrium. However, the two systems are not easily comparable across other dimensions. First, there is little labor mobility between the two societies given linguistic differences. Second, the culture and institutions of the two countries have been shaped by different histories, causing significant divergence in terms of attitudes, laws, and industrial profiles that might have an effect on productivity.

In contrast, the former English colonies of Australia, the USA, and

1. It has been argued by Acemoglu and Pischke (1999) that labor market reform to generate a more Americanized high turnover system may endanger the apprenticeship system as it reduces union power. Indeed, Germany is rapidly becoming more “Americanized” with respect to the influence of labor unions with labor density dropping from over 40% in 1991 to around 25% today. However, collective bargaining coverage is a much better indicator of relative union power and that remains at 68%, in sharp contrast to the United States where the percentage of those covered by collective bargaining contracts and those who are unionized are fairly similar at 15% and 13% respectively.
Canada share many characteristics that make them preferable in terms of comparative research. They all share English common law legal traditions, common histories and immigration patterns, and are culturally more similar than other societies. Union density is also closer than in Europe although a far greater percentage of the population is unionized in Canada (30%) and Australia (23%) than in the USA (13%). However, the biggest difference is in collective bargaining coverage rates. While the coverage and unionization rates for Canada and the USA are within a few points of one another, Australia has significantly higher collective bargaining coverage rates with over 70% of the population covered by a collective bargaining agreement. This makes the influence of unions in Australia far greater than that in the USA or Canada, despite a relatively low union density.

2. Australia

Apprenticeship has only become a major component of Australia's training policy in the past half century, growing from less than 10,000 nationwide in 1935 to nearly 400,000 today. Prior to 1950, apprenticeships were dominated by teenagers, and awards, the Australian term for the setting of a minimum wage, were assessed based on four criteria: the needs of the apprentices, the value of their work, the desire to protect skilled workmen from the competitions of low-wage apprentices, and the ability of the employer to pay (Ray, 2001, p. 8). Awards for apprentices were lower than those of journeymen because their quantity and quality of work were lower and apprentices, being typically teenagers without families to feed, were seen as less needy than adult journeymen. Typically, they were set as a percentage of a journeyman's wages, recognizing these factors but also in an attempt to ensure that the wages were not too low relative to experienced workers, a case that might cause employers to abandon skilled craftsmen in favor of trainees. In addition, there was an understanding that steady flows of apprentices were needed to ensure a ready supply of journeymen but not to allow this to cause an imbalance either in present or future supply relative to present or expected demand.

World War II presented challenges to the traditional model of apprenticeship. With so many young men taken by the draft and uncertainty regarding whether apprentices would be able to continue in the industry or be taken up by the armed forces, apprenticeship training stagnated. Instead, skilled work often was accomplished by women who were accorded a much narrower range of skills than a traditional apprentice due to the necessity of placing them quickly in the trades. Following World War II, Australia faced an issue of how to integrate the large numbers of returning servicemen into society. The Commonwealth Reconstruction and Training Scheme was utilized to speed up training of men who had returned from
serving the country during the war, as it was recognized that mature adults required less supervision and years of training to become skilled. Yet both of these potential sources of new entrants (adult learners and women) were quickly discarded as industry returned to its old habits of training high school dropouts (Ray 2001, p. 10).

Part of the return to complacency was manifested because of a large influx of skilled immigrants who could easily fill much of the gap between the needs of the industry and the supply of apprentices. But by the late 1960s, immigration no longer was bringing in the quantity of apprentices necessary to maintain the pool of journeymen in the trades. This decline has coincided with the elimination of the “White Australia” immigration policy and the subsequent desire for a broader class of economic migrants who bring information skills to the country. Immigrant skilled workers declined in both absolute and relative numbers so that where they once accounted for nearly 50% of the intake into the journeymen classifications, by the mid 1980s they accounted for only 5%, while apprentices nearly tripled over the same time period (Ray, 2001, p. 11).

Government did not sit idly by as these changes occurred. Despite resistance among the trades, Australia was about to embark on an unprecedented intrusion into this traditionally industry-driven system of training. In 1954, the Wright Committee on Commonwealth-State Apprenticeship concluded that apprentices needed to be focused on training rather than the creation of employment, a sentiment echoed by the Kirby Committee some thirty years later. Wright (1954) further recommended that Australia regulate the training of apprentices by fixing wages and specifying working conditions and the training regimen so that it was uniform across states.

However, little was done of a reform nature until 1968 when the Beattie Commission called for the Commonwealth to act as a financial partner in apprenticeship training to ensure the continued viability of the model as a training method. In addition, the Commission argued, like the Wright Commission had fourteen years earlier, that there needed to be uniform training schemes across states to facilitate the ability of labor to move where it was needed. Apprenticeship and training were seen as a mechanism to update and improve general skills as opposed to specific skills, and an extension of the training regimen to occupations not traditionally associated with apprenticeship was recommended as well.

The Tregillis Report on The Training of Skilled Workers in Europe (1969) was published on the heels of the Beattie Commission. Its recommendation that employers be relieved of some of the costs of apprenticeship only reinforced the earlier Commission’s conclusion. Beyond allowing Australians to think, for the first time, in terms of their apprenticeship system in a comparative context, the Tregillis Report looked into possible mechanisms to allow for a greater role for the state in manpower development. Australia was
about to move from talk to action. Indeed, as the Kirby Committee (1985) notes, Australia's labor initiatives were almost non-existent when it came to reforming, as opposed to talking about reforming, the apprenticeship system of training. But the Tregillis Report sparked the collective imagination of the Australian consciousness as Australia National University hosted the first National Conference on Training for Industry and Commerce in 1971 where many of the ideas brought forth by the Beattie Commission and the Tregillis Report were refined and extended.

By 1972, the first partnerships between industry and government were brokered with training centers established to assist industry in developing consistent apprenticeship standards and methods of training. These would work to assist local initiatives such as Technical and Further Education (TAFE) and pre-apprenticeship courses that had been introduced at community colleges. Contributions from government were raised dramatically. In 1972, less than $1 million was being spent on training programs, but by 1985 that figure would reach nearly $850 million (Ray, 2001, p. 16, 18). Much of this was in the form of the National Apprenticeship Assistance Scheme (NAAS) that paid employers who took on new apprentices. The NAAS would be replaced and extended in 1977 with the Commonwealth Rebate for Apprentices Full-time Training (CRAFT) that additionally paid employers for the cost of allowing apprentices to attend technical colleges to enhance their skills through classroom instruction in addition to on-the-job training. The schemes proved to be very successful with much of the growth in apprentices coming from small employers who were taking on only one or two apprentices. This represented a major shift in technical and vocational training policy because prior to that point smaller firms could only afford to undertake such training if they were union shops. It also allowed for a realization that apprentices were not simply trainees for a particular employer but that employers were providing training for an industry where these individuals could freely move to other positions.

In economic terms, the tendency to underpay for such training is characteristic of the public goods nature of the apprenticeship. As such, since the economic benefits are diffused throughout the industry, there is an incentive not to provide the training or to release apprentices for off-the-job training courses that would be of a more general skills nature. However, the economic incentive packages generated by the Australian government effectively have altered this calculus in the minds of many employers because they do not have to undertake the entire cost of providing such education. At the same time, they can benefit from the enhanced skills set that is realized throughout the industry because all apprentices receive better training. This reduces free ridership, the tendency of employers to desire to pay only the minimum level of expenditure for their own apprentices but to attempt to collect from those employers who undertake more training by
offering higher wages for those who are already trained. By imposing an awards system that mandates minimum levels of payment throughout industry and by paying for critical components of the apprenticeship system, the Australian government has reduced such "beggar thy neighbor" tendencies among employers.

By the mid-1980s, Australia was facing an educational and labor market crisis. Apprenticeship, while doing its job in training new entrants to the trades, was becoming an ever-increasing draw on the public purse. Massive unemployment and a large number of high school dropouts became a major problem for the Hawke government. In addition, there were calls to extend apprenticeship support even further because of the perception that West Germany’s economic growth was due, in large measure, to the success of its comprehensive apprenticeship program that undertook training in far more occupational classes than was done in other countries.

The Kirby Committee (1985) undertook to examine the options available to improve the situation. It quickly dismissed the notion of extending the CRAFT program to other sectors because of the cost factor and also argued against the German model of reducing wages to apprentices to allow for more training and less productive activity. Instead it proposed the institution of traineeships that would attract dropouts and would focus on the development of skills that could be acquired in an intensive manner. It also proposed to limit pay to time spent on the job and thus allow the government to get away from the policy of paying for release time. Instead, it suggested that wages should be adjusted to better reflect the productive capacity of the apprentice and that employers should be forced to pay for apprenticeship training through the instigation of a training fee borne by all employers, not just those who undertook apprentices. As Ray argued, “students should be treated as students, and workers as workers” and that government subsidies only encouraged high levels of apprentice wages (2001, p. 25). In addition, there was still the question of whether apprentices, particularly those in smaller firms, were being prepared adequately because of a lack of standards for assessing apprentice skills. While standards existed, there was no uniform method of determining performance to those standards.

Still, only the recommendation for the establishment of a traineeship program was instituted and, while it may have seemed to be a failure in terms of uptake by students, the dramatic rise over the next fifteen years in terms of school retention makes the ultimate impact of the program indeterminate, since fewer students were in need of such transition-to-work assistance than before.

In the 1990s, the Australian Vocational Certificate Training System was instituted. This system incorporated a mechanism for determining skills developed from prior learning, a means of assessing apprentices and their
relative level of competency measured against national standards of excellence, multiple mechanisms for acquiring skills, a national training wage that was not age-based, and the establishment of a National Employment and Training Taskforce (NETFORCE) to implement these changes. Much of this falls under the framework of “New Apprenticeship,” the buzzword in Australia for the reinvention of this traditional mechanism for enhanced learning. With lifelong learning initiatives and worker retraining for a new millennium becoming a new focal point, the increase in apprenticeships has been dramatic. Much of this is because of the broadening of the base of occupations that now fall under the heading of apprentices, but it is also due to factors that are occurring globally, requiring a reinvention of skills for workers who had been trained in one paradigm but now must shift to another. Indeed, over the past ten years, apprenticeships and trainees have gone from 136,000, a figure that was fairly constant throughout the 1980s and early 1990s, to nearly 400,000 last year, according to Australia’s National Centre for Vocational Education Research, otherwise known by the acronym NCVER (2001; 2005). Australia spends billions on its training programs and their current strategy appears to be paying dividends as completion rates have increased dramatically. In addition, 35% of all apprentices are women, making training choices more resistant to gender segregation.

Part of the improvement in outcomes is likely due to the opening up of the off-the-job training component to entities other than the traditional TAFE sector. Students who drop out of school are far more likely to be kinesthetic learners as opposed to auditory or visual learners who tend to do better in more traditional academic venues. Kinesthetic (or tactile) learners learn “by doing,” the traditional way of learning in apprenticeships, but there is a disconnect in the style of learning emphasized between on-the-job training and the off-the-job, more theoretical, component of vocational education emphasized in TAFE.

3. USA

The history of apprenticeship is far less government-oriented in the USA and far more oriented toward those who have completed at least a high school degree. While Australia has stressed the need for apprenticeships as a solution to unemployment among high school dropouts and has increasingly become government-oriented in its approach to training and vocational education, the USA is the polar opposite. Most apprenticeships require a high school diploma or the General Education Diploma (GED) certifying a similar level of competency. In addition, increasingly, the American approach is not apprenticeship or a college degree but rather both an associate’s degree and an apprenticeship.

Although the National Apprentice Act of 1937, passed in the throes of the
Great Depression, gives the national and state governments an oversight role in terms of apprenticeships, the vast majority of these are merely overseers of union programs and twenty-seven states lack any sort of regulatory agency to register apprentices, leaving this task to the federal government. Furthermore, program registration is voluntary and, in many states, quite limited. While Australia spends billions, the USA spends only around $20 million on its program. Despite having a population fifteen times that of Australia, the USA has only about 700,000 registered apprentices, with between 50% and 60% of these being apprentices in the building trades. Much of this increase has occurred in the past four years with a major expansion in non-traditional occupations in line with a report from the General Accounting Office (2001) to try to spread this method of training to other sectors of the economy. Yet despite these efforts only about 7% of all apprentices in the USA are women. With the increasing presence of women in university, this only exacerbates the problem of reducing the occupational gender segregation in the trades.

In general, the government’s role is merely to certify apprenticeship programs and to register apprentices. One exception to a lack of government support for apprenticeship is the prevailing wage program at the federal and state levels. Passed during the Great Depression, the Davis-Bacon Act provides for the payment of a “prevailing wage” on construction projects funded by federal tax dollars. Similar programs exist at the state level in many states for state and local-financed construction. Employers on such projects are allowed to employ apprentices only if those apprentices are part of a registered apprenticeship program. Thus federal and state tax dollars indirectly help to contribute to the success of apprenticeship.

Since prevailing wages are often set at the union rate, this has allowed union construction firms to continue to compete effectively against their non-union counterparts. Several non-union firms have argued that the ability to utilize apprentices on such projects places them at a competitive disadvantage but since wage scales for apprentices are based on their reduced productive capacity, this is not as straightforward an argument as it otherwise might be. More to the point is that non-union firms often pay their workers lower wages, implying that each worker is less skilled than their union counterpart. As such, they are unable to compete when wages are raised not because of their inability to attract apprentices but because of an inability to raise worker productivity (Allen, 1984).

The result is that over 90% of all apprentices in the building trades in the

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2. The U.S. Department of Labor (2004) reports that there are about 490,000 apprentices in the USA, but its coverage is limited to some 32 states covering about 70% of the US population. The author conducted a survey of the all of the other states and confirmed the figures for the states reporting to the U.S. Department of Labor to determine the actual figure of apprentices.
USA are union apprentices, despite the fact that less than 20% of the trades workers are unionized. Although non-union shops have established some apprentice programs, their output of such individuals is far lower than their overall market share would indicate.

The General Accounting Office (2001) identified three impediments to a more comprehensive apprenticeship system for the USA. First, there is really no systematic process for the U.S. Department of Labor to certify occupations as apprenticeable. Instead, it tends to react to input from industry and organized labor. This is highly problematic because apprentices cannot be registered unless they are in an apprenticeable occupation and yet occupations may not be considered apprenticeable without apprentice programs in place. This means that it is difficult to develop new apprenticeship programs and implement them without a more proactive stance from the government.

Second, employers in industries that were not traditional users of the apprenticeship model were often resistant to the idea of apprenticeship because they could not easily envision how to integrate it with the competitive nature of their industry. Apprenticeship requires a cooperative effort between employers and employees to exploit the gains from the provision of the public good. However, despite being in a world of increasingly contingent labor, where workers are hired for a particular project and then let go after its completion, worries about having workers take what they have learned to other competitors was a constant concern. For example, because the computer animation industry largely employed workers on a contingent project-by-project basis:

State officials suggested that studios adopt the construction trade model, where workers are essentially pooled and employers draw from the pool as needed. Employer reaction was strongly against this model because the motion picture industry did not want to share workers; the proprietary nature of the work, with companies operating in very competitive fields with new technology, made them uneasy (GAO, 2001, p. 9).

The irony was that the workers were being de facto shared in any case. The mere fact that workers were not locked into long-term contracts ensured that they would continuously journey from one employer to the next. One of the ironies of globalization is that at a time when employers are increasingly seeking to leverage new technology over their competitors and maintain secrecy, the individuals responsible for using this technology are being freed from the tethers of their workplaces like never before. Thus employer narrow-mindedness and worries about committing to an extended period of training did not allow them to see that apprenticeship could also allow for training to be shared, reducing the costs to the employer and
improving the quality of the collective workforce.

Third, there was a difficulty for the U.S. Department of Labor to share information gleaned from the implementation of apprenticeship programs in various states. Due to an antiquated system meant only to furnish statistical information over a narrow range of variables, there was no means to measure various programs against key performance criteria. In addition, the system did not allow states to avoid the mistakes or benefit from the lessons learned by other states that were developing similar programs:

[The Department of] Labor lacks a mechanism to share information among all states, which could be helpful as Labor tries to expand apprenticeships to less-traditionally apprenticed occupations. . . . For example, two states we visited were each working independently to develop potential apprenticeships within the information technology (IT) industry. They were unaware of similar efforts by the other or by Labor nationally. . . . Neither could readily access national information on other states’ progress or success at similar effort [because] such information is not readily available (GAO, 2001, p. 11)

4. Canada

Canada is positioned somewhat between these two extremes. Government support is nowhere near the level that exists in Australia, but more is done by the federal and provincial governments than in the USA. Provincial qualifications examinations limit entry into many skilled trades unless the individual has acquired the skills provided by apprenticeship programs. In order to sit for these examinations, applicants must have industry experience, and apprenticeship certification is the major entry point for these qualification standards. Each of the provinces supports apprenticeship in a variety of ways, including developing sets of standards in consultation with the federal government through the Red Seal program, so that apprentice qualifications are more easily transferable across provinces. Unfortunately, only forty-five out of more than 300 apprenticeable occupations in Canada enjoy this status, and to obtain certification requires an additional examination to ensure the meeting of interprovincial standards that is administered by the Canadian Council of Directors of Apprenticeship. However, each province also jealously guards its own independence, ensuring that many qualifications are not explicitly recognized across provincial lines. This has led to the necessity of agreements such as the 1996 Ontario-Quebec Agreement on Labour Mobility and Recognition of Qualifications, Skills and Work Experience in the Construction Industry.

Provincial assistance varies widely. At one extreme, the government of Ontario alone spends almost as much as the entire U.S. government on
apprenticeship training, training 75,000 apprentices, a figure that exceeds California's total by more than 9,000 despite having only about 40% as many residents. Ontario invests heavily in "pre-apprenticeship" programs and provides an interest-free "Loans for Tools" program to assist first-year apprentices in acquiring the tools necessary to conduct a trade, allowing them to stretch out payment over the length of their apprenticeship. The province works with employers to create apprenticeship solutions tailored to their needs but which meet industry standards. Similar to the way it is organized in the USA, classroom training typically is positioned within the community college sector or provided by labor unions. This is in contrast to the Australian model, which has opened up training to a more significant degree to outside trainers certified by the government. Part of this is because of the existence of an Apprenticeship Enhancement Fund, which funds training resources at community colleges, giving them a distinct capital advantage over private sector providers in addition to the cost advantages of a state-provided education to employers and apprentices alike. Moving toward a greater involvement of government, the Ontario government has proposed a tax credit that would act in a similar fashion as earlier Australian initiatives to partially offset the cost of providing training through the use of a refundable tax credit to employers who train apprentices.

On the other extreme, Alberta has a much less hands-on approach than Ontario though it trains a higher proportion of apprentices relative to its population than any other province. Indeed, with more than 50,000 apprentices training among its 3 million inhabitants, Alberta approaches (but fails to reach) the ratios found in Australia. More telling, it trains in only fifty-five trades (Ontario's Ministry of Training, Colleges and Universities recognizes 130) and occupations, but industry committees are committed to making the apprenticeship system the primary or, in some cases, the sole means of entry into these positions. Disdaining the use of tax credit or other incentive packages, the government of Alberta subsidizes apprenticeship through seven community colleges and two technical institutes, which provide almost all of the off-the-job training requirements in the province. Whereas Ontario funds development of new apprenticeship opportunities and takes a proactive approach to apprenticeship, Alberta waits for industry to propose new apprenticeship opportunities. This has the effect of reducing the number of occupations that are apprenticeable but makes industry "buy-in" a foregone conclusion.

Similar to the USA, apprenticeship in Canada is typically geared toward those with at least the equivalent of high school completion. Unlike in the USA, the construction industry accounts for only about 20% of the 234,000 apprentices in Canada. Indeed, metal fabrication and motor vehicle and heavy equipment manufacturing both have equivalent numbers of apprentices as the construction industry, although the greatest percentage growth
has come from the food service and "other" industries, a catchall phrase used to describe industries that are otherwise not classified. Still, apprenticeship remains within a fairly narrowly defined list of occupations in comparison to Australia and even the USA. Whereas the U.S. Department of Labor recognizes 850 occupations as apprenticeable, all of Canada's provinces together recognize only about a third as many, but there is a great deal more cohesion within each industry as to the necessity of employing only those individuals who have successfully apprenticed themselves.

Canada has similar numbers to the USA in terms of the enrollment of women in the apprenticeable trades. Indeed, the slightly larger proportion of female apprentices is entirely due to the fairly even distribution in the food service industry between men and women. With women entering university in greater numbers relative to men, apprenticeship's gender gap with men outnumbering women by a factor of ten to one increases the probability that gender segregation in occupations will continue for the foreseeable future. Indeed, when we limit ourselves just to the building trades, we see that around 7.4% of all apprentices are women in California, a figure that is approached only by Newfoundland (7.2%) while as a whole Canada (3.6%) exhibits a similar proportion of female apprentices as Pennsylvania (4%).

5. Review of the Canadian Evidence

The key difficulty in Canada is the rate of completion. The USA and Australia have similar completion percentages for their apprenticeship programs, but Canada has suffered a significant fall in completion. While apprenticeships are on the rise, completions have not kept pace. One possible explanation gleaned from the American evidence is that this might have something to do with the significant union presence in apprenticeship in the USA relative to Canada. Contrary to what might be the popular perception of Canada as a locale where most of the apprentices are affiliated with unions, Sweet and Lin (1999) find that only 35% of all apprentices are union members. When one examines data from the USA (Byrd & Weinstein, 2005; Londrigan & Wise, 1997; Bilginsoy, 2005; Bilginsoy, 1998) and Australia (Smart, 2001; Ball and John, 2005), we see a consistent effect that union membership is positively related to program completion and that unions consistently provide a greater number of apprenticeship opportunities than their numbers would otherwise suggest.

However, the evidence is mixed in Canada. When we restrict our examination to the construction industry, we see a significant and slight positive impact of unions in British Columbia in two studies (Holmes and Singh, 1994; 1995) but no effect in a third study (Sweet and Lin, 1999). Indeed, the
effect of unionization was found to be negative for the construction trades in the Prairies in the sole study that examines the question (Sweet and Lin, 1999), though that same study found a strong positive influence in Quebec. Upon generalization to all trades including those outside of the construction sector, the effect was found to be negative and significant for British Columbia and positive and significant for Quebec at the 5% level of significance. However, for Canada as a whole, the same study found apprenticeship completion to be positively related to union membership. Unfortunately, all three studies suffer from the use of rather dated material, with Holmes and Singh using proprietary data and Sweet and Lin using a single year’s survey, the 1994/95 National Apprenticed Trades Survey to carry out their results.

Indeed, trend analysis suggests a more systemic problem is at work here. Sharpe (1999) notes that completions in the 1980s and 1990s declined precipitously, especially in Quebec, where they declined by two-thirds. Even outside of Quebec completion rates declined by about 30%. Whereas completers outnumbered discontinuers in Australia, the reverse was true in Canada. Indeed, by the late 1990s, there were eight apprentices who dropped out for every one that completed in Quebec and 1.5 apprentices who dropped out for every one that completed in the rest of Canada. Completion rates were below the standard 60% mark found in the USA for all provinces except British Columbia and were lowest in Quebec, where approximately 20% of all apprentices completed on time in 1997. Indeed, the completion rate in Canada for apprentices was around 40%. Thus while the USA may suffer from a lack of enrollments, Canada suffers from an inability to register completions.

Indeed, the union factor may be less compelling in Canada than in the USA because apprenticeship programs meet uniform standards and have more rigorous oversight as well as a common proficiency requirement. As such, both union and non-union apprentices receive equivalent training and it is likely that the same issues raised in Australia with regard to union participation in the formation of apprentice programs is at work in Canada. Additionally, union status may prove to be of a lesser importance because even non-unionized apprentices may be working under collectively bargained terms of employment as the difference between those covered by collective bargaining and those who are actually members of a union is far greater than in the USA. All of these factors would serve to diminish the role of union membership on apprenticeship completion.

In comparing states in the USA with provinces in Canada, Quebec has the same number of completions as Pennsylvania with three to four times the number of apprentices. Ontario has a higher number of apprentices but fewer complete their apprenticeships than in California.

One of the lessons that can be gleaned from the U.S. experience is that
a strong government presence is not necessary for ensuring completion, though it does appear to be helpful for raising enrollments. However, the presence of an extensive prevailing wage program is beneficial for completion. The Canadian government has not done enough to strengthen its “Fair Wage” Act to ensure the continued viability of apprentices. Numerous studies done in the USA (Philips 1999; Philips et. al., 1995; Kelsay, Wray, & Pinkham, 2004) demonstrate the importance of a strong prevailing wage program on apprenticeship training.

Another is a need for national standards in all apprenticeable occupations. Without red seal certification, apprentices graduate into an uncertain and geographically limited labor market. Interprovincial agreements on training will enhance the ability of Canada to compete in the world today. Both the USA and Australia have such programs, and this reduction in barriers to labor mobility can only increase both the intake and completion rate of apprentices.

Expansion of apprenticeship beyond the traditional trades may prove useful as a long-term strategy, but unless and until Canada gets a handle on how to deal with its low completion rate, it may prove difficult to extend the model to other sectors. For example, despite a 40% increase in apprenticeships, completion rates barely moved from 1996 to 2002 (Statistics Canada, 2004).

6. Why Should We Care?

None of these trends and analyses really matter if apprenticeship is a dead end that has no place in the modern world. After all, with the information revolution why would we need to maintain a system that is based on guild trades that predate the industrial revolution? However, there are compelling reasons for why we should care and should try to resurrect apprenticeship training from the moribund fate from which it now finds itself.

With greater labor mobility and a lower tying of employees to employers, the modern industrial economy requires individuals with a diverse skill set that can be easily transferred from position to position. Since there is little incentive in such a scenario to provide these skills at the employer level without a corresponding commitment from all employers in the industry, apprenticeship provides a model for worker retraining and enhancement that will reduce social inequality and tensions. Canada is quickly learning that it no longer can select the cream of the crop when it comes to international migration patterns. With rising incomes in traditional emigrant nations (China, India), individuals may not be as willing to relocate to Canada, and so a policy of skills improvement by taking the trained workforce of others may prove less viable than it has been in the past.

In addition, the need for greater competitiveness due to globalization
leads to a necessity for continuous retraining. Workers no longer will be staying with the same company and receiving a gold watch in commemoration of years of dedicated service. Indeed, it is likely that workers will not only switch companies but industries and occupations as continuous retraining becomes the mantra of the 21st century and beyond. With rapid increases in technology, the tactile learner is placed at an advantage for the first time in generations. Workers must be able to adapt to changing circumstances, and apprenticeships provide a legitimate mechanism for them to retrain, especially if they have families that they need to support and so must draw on at least some income maintenance to survive.

In light of declining male enrollment in college, there is an additional need for alternative vocational education such as that provided by apprenticeships. Beginning in the high schools, as Ontario has done with its pre-apprenticeship programs, is a healthy start but apprenticeship needs to also broaden to attract more women. Occupational segregation on the basis of sex, even if by worker choice, has potentially undesirable consequences in the future as gender stereotyping of occupations may lead to a rebalancing of financial incentives that will cause greater dislocations for Canadian families.

The maintenance of the craft system is another important reason to continue apprenticeship. Many of the crafts combine art with science, requiring a master craftsperson to appreciate the traditions of the occupation in a way that is not easily conveyed except by on-the-job training. Yet, the ability to translate an idea into reality requires ingenuity and skills that are both highly quantitative and qualitative in dimension and the importance of providing a solid background in mathematics and science to all craftspeople requires rigorous off-the-job training as well. A construction worker who is poorly trained is a greater hazard to society than many in so-called white-collar occupations. The maintenance of the craft system ensures that workers see their job as one in which quality, not quantity, is the crucial ingredient.

Finally, in order to continue a highly skilled workforce, apprenticeship must serve as one of the pillars of the Canadian educational system. Not everyone can, or should, go to university, despite the dreams and wishes of a multitude of parents. Apprentices grow into workers who translate visions into reality. They build the machines and buildings that modern society uses to function. They wire the Internet, ensure adequate power comes into our homes, and create a wide variety of services that modern society takes for granted, serving as cooks, barbers, and mechanics.

7. The Road Ahead

Yet, the future is paved with a minefield of potential issues. Declines in unionization may make organized labor less able to organize workers, lead-
ing potentially to a “beggar thy neighbor” policy among competing firms. There is also the need to integrate Canada’s apprenticeship programs more with other community college programs so that today’s apprentices learn a skill set that can go beyond that which is practiced only within their own trade.

Canadian apprenticeship will also face increasing challenges in coming to grips with changes in Canada’s immigration policy. Applicants are increasingly being judged not against their suitability within a particular occupation but rather their adaptability to changing circumstances. Thus higher education receives a greater degree of importance in the selection process. This, coupled with complaints among skilled immigrants that Canada’s labor policy discriminates against those who lack Canadian training tarnishes the ability of Canada to attract the same level of applicants that it once was able to admit. Shortfalls in immigration goals tend to be on the business immigration and skilled worker side, making Canada’s immigration policy more of a mirror of the U.S. policy toward family reunification with all of its consequent reduction in the relative propensity of immigrants to have superior qualification relative to native-born applicants in the labor market. This makes a “home grown” apprenticeship program increasingly important with the large number of retirements that are anticipated in the coming years. A failure to adequately address these issues will lead to an increase in relative wages that could make Canadian labor less price-competitive and lead to a further erosion of the craft system as workers are seen less as master craftspeople and more as cogs in a wheel who are interchangeable and not particularly skilled. Such a policy will have ramifications for Canada’s standard of living that are particularly negative in light of increasing integration of markets. Canada must, therefore, alter its internal labor mobility policy as soon as possible, undertake reforms to support apprentices and ensure that they do not drop out of the system, and provide incentives for employers to instigate retention policies that will ensure that apprentices can maintain full-time status, a key determinant as to whether a person will complete a program.

References


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