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Apprenticeship Training in Ontario: Literature Review and Options for Further Research

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Introduction

At first glance, apprenticeship training appears to be a perfect educational solution for many Ontarian, providing a clear pathway into the labour market. Moreover, its heavy emphasis on on-the-job training makes it a potentially attractive option for individuals who are not inclined toward the classroom and lecture hall-based instruction of university and college.

Nevertheless, apprenticeship training remains a very small part of Ontario's postsecondary picture. Enrolment in apprentice programs stagnated in the 1990s relative to other forms of higher education (Sharp, 2003), and experienced an actual decline during the recession experienced in the first half of that decade (Skof, 2006). While the absolute number of registrations has once again begun to grow, completion rates have not recovered at the same rate (Skof, 2006).¹ More troubling, this same research indicates that nearly half of apprentices in Alberta, New Brunswick, and Ontario fail to complete their training programs at all (Morissette, 2008). This may indicate a serious retention problem within Canada's apprenticeship systems.

Research also shows apprenticeship is still largely the domain of older, male workers. The average age of apprentices was 29 in 2003, and despite a variety of programs designed to encourage women to pursue apprenticeship training, only 9.3 per cent of registrants are female (Skof, 2006; Sharpe & Gibson, 2005). Aboriginal individuals, individuals with disabilities, and immigrants are also under-represented in Ontario's apprenticeship system (Canadian Apprenticeship Forum, 2004).

Ontario also appears to be lagging behind its Canadian peers in terms of the proportion of the population with an apprenticeship or trades certificate or diploma in the skilled trades. Only 8.8 per cent of Ontarians aged 25-64 indicate a skilled trades certification as their highest level of postsecondary achievement, as compared to a national average of 12.4 per cent. In Quebec, 18.1 per cent of

¹ This may be a function of the time it takes to complete an apprenticeship program. Recent Statistics Canada research suggests more than half of apprentices take longer than the nominal length of their apprenticeship to complete their program. Of completers, 87 per cent finished their program within six years. In Ontario, nine per cent of apprentices are still enrolled in their programs 11 years after their initial enrolment. Thus, the stagnant completion rates relative to the increase in new registrations may be due to a lag generated by long completion times (Morissette, 2008). The results of increased apprentice registration in the late 1990s and early 2000s may only now be reflected in completion numbers.

individuals aged 25-64 possess a skilled trades credential (Statistics Canada, 2008).²

Understanding what works—and what doesn't—in Ontario's apprenticeship system cuts across the Higher Education Quality Council of Ontario's (HEQCO) mandate. It has implications for the accessibility of Ontario's postsecondary system, in terms of providing education options that work for all of Ontario's potential learners. It involves questions of system design, inasmuch as it is an educational pathway important both on its own and in the way it interacts with other forms of higher education. Learning quality is also an important issue in apprenticeship training, as the strength of instruction in the vocational training system will have a serious impact on the ability of Ontario's workforce to respond to the challenges of a knowledge economy. Finally, apprenticeship is also intrinsically linked to accountability, as public funds are an important financial support of the apprenticeship system.

This paper is intended to provide a brief overview of the relevant literature on apprenticeship in Ontario, Canada, and around the world. It pays particular attention to the challenges facing apprenticeship systems in the 21st century. The literature review will also be used as a starting point for posing a series of research questions aimed at developing a better understanding of how apprenticeship in Ontario may be improved and expanded.

Overview: Apprenticeship in Ontario

Expressed in the simplest terms, “apprenticeship” refers to a form of vocational training in the skilled trades that is primarily undertaken ‘on-the-job’ under the supervision of certified journeypersons. During the training period, apprentices are paid employees of the organization providing the training. Alongside workplace instruction, apprentices in Ontario receive a portion of their training in a classroom environment, usually through a college of applied arts and technology (CAAT). At the completion of an apprenticeship program, the apprentice writes a series of exams and is certified as a journeyperson in their trade.

Apprenticeship is a longstanding educational pathway for Ontarians seeking entry into the workforce. Indeed, apprenticeship predates most other forms of postsecondary education in the province. The Government of Ontario has been actively involved in apprenticeship training since 1928, when it began to actively

² It should be noted that Quebec does not have a formal apprenticeship training system. Skilled Trades training is accomplished primarily through the cégeps, which may explain the relatively higher level of attainment in this area.

regulate skilled trades training through the *Ontario Apprenticeship Act*. In fact, Ontario was the first province with a government-regulated apprenticeship system. Today, apprenticeship remains a significant focus of the Ministry of Training, Colleges and Universities (MTCU), regulated under the auspices of the *Trades Qualification and Apprenticeship Act* (1990) and the *Apprenticeship and Certification Act* (1998). These acts govern eligibility for apprenticeship, certification standards, and administrative details such as the ratios of journeyperson-to-apprentices permitted in various trade environments.

Funding for apprenticeship in Ontario comes from three sources (Ministry of Training, Colleges and Universities, 2007):

- Government, through financial support to CAATs to deliver apprenticeship programming; financial aid for apprentices to purchase tools and equipment; financial incentives to employers (such as the Apprenticeship Training Tax Credit³); and funding for the administrative and client/employer services;
- Apprentices, through fees paid to CAATs for the delivery of in-class training; and
- Employers, through wages paid to apprentices and the human resource costs associated with journeyperson instruction. Currently, employers cover between 75-90 per cent of the costs of apprenticeship in Ontario.

Apprenticeships in Ontario can be grouped according to seven major trade groups: building construction trades; electrical, electronics, and related trades; food and services trades; industrial and related mechanical trades; metal fabricating trades; motor vehicle and heavy equipment trades; and 'other' trades. Of all the trades in Ontario, 21 are designated 'compulsory trades', meaning that anyone who wishes to be employed in this area must be a certified journeyperson or participating in a registered apprenticeship program.

Ontario currently participates in the Interprovincial Red Seal Trades program, designed to increase mobility for journeypersons in Canada. Each participating jurisdiction adopts common standards for apprentice training, and in theory, anyone receiving certification in one of the 49 Red Seal trades may work in any other member province.

³ The Apprenticeship Training Tax Credit (ATTC) was created in the 2004 provincial budget. It reimburses employers 25 per cent of eligible apprentice expenses (such as salary and benefits) up to \$5,000 for each eligible apprentice. More information on this credit can be found at <http://www.rev.gov.on.ca/english/bulletins/ct/3020.html>.

In 2007, the Government of Ontario announced it would begin a consultation process aimed at investigating the current system of compulsory certification, and the possibility of extending it to other skilled trades. The provincial government also announced adjustments to the apprentice/journeyman ratios in several trades, making it easier for employers to take on more apprentices.

General Observations on Apprenticeship Literature

For the purposes of this document, the reviewed literature was selected according to the following criteria:

- The source document be no more than 10 years old;
- The source document be primarily focused on Canada, or contain information relevant to a discussion of apprenticeship in a Canadian context; and
- The source document, wherever possible, focuses on the practical issues and challenges faced by apprenticeship systems in Canada and around the world.

Exceptions have been made to these criteria wherever a document was deemed to be useful to understanding apprenticeship programs in a contemporary context.

The primary observation taken from the examined literature is that apprenticeship training is under-analyzed. This is particularly true when it comes to scholarly publications. The vast majority of available material is produced by governments or government agencies, such as the Canada Council on Learning (CCL) and the Canadian Apprenticeship Forum (CAF). Moreover, there is a shortage of Ontario-specific analysis. The vast majority of existing work is national in focus, and does not break down observations or conclusion by province. This is surprising, given that vocational training and apprenticeship are provincial responsibilities. One would therefore expect significant difference in apprenticeship systems in different jurisdictions.

There is, however, broad agreement within the literature as to the challenges facing apprenticeship in Canada. In addition, there is consensus on the importance of apprenticeship training to postsecondary education systems. So, while some authors are somewhat apocalyptic in their assessment of the overall health of apprenticeship training, nearly every writer affirms an enduring need to maintain apprenticeship as an educational pathway in Canada.

The literature also demonstrates a lack of deep quantitative data. Beyond the straightforward descriptive information, there is very little in-depth statistical modeling to explain the variations in apprenticeship enrolment, retention, and completion.

The current literature on apprenticeship training demonstrates the following specific gaps:

1. There is a lack of Ontario-specific data on apprenticeship barriers. In particular, there has been no work done on how Canada-wide barriers to apprenticeship training manifest themselves in Ontario.
2. Little work has been done to assess the uniqueness of Ontario's apprenticeship demands, given its relatively mature manufacturing sector.
3. Similarly, there is very little comparative work aimed at determining preferred practices in other jurisdictions that are not present and could be applied in the Ontario context.
4. Ontario-specific quantitative work—such as apprentice or employer surveys—is almost totally absent. This forces prospective researchers to infer certain conclusions about public and apprentice attitudes without the ability to substantively demonstrate them.

Theoretical Considerations

Apprenticeship training fits into an area of pedagogical theory concerned with 'alternation education' (Shuetze & Sharper, 2003). Alternation education refers to methods of program delivery characterized by alternating periods of classroom and workplace-based instruction. There are three broad categories of alternation education: internship, apprenticeship, and co-operative education. Internship programs tend to feature the least workplace instruction, while apprenticeship training relies most heavily on employer-supported training. Cooperative education programs typically fall somewhere between these two poles.

Alternation education is typically presented as a way to better harmonize the academic aspects of postsecondary education with the employability skills and experience necessary to be successful in the labour market. Apprenticeship is perhaps the purest example of the ethos of alternation education, since it is almost exclusively focused on providing a participant with a skill-set for a specific career.

Discussion of apprenticeship training tends to revolve around two separate but related approaches: a skills needs perspective, that emphasizes the need for a

robust apprenticeship program to satisfy the skilled labour requirements of the emerging 'knowledge economy'; and a school-to-work transition perspective, broadly concerned with facilitating the movement of youth from educational institutions into the labour market.

Analysis from the first perspective tends to focus on the difficulties apprenticeship systems have in producing an appropriate number of skilled tradespeople to fulfill the requirements of an advanced, technological economy. In other words, this perspective is interested in the outputs of an apprenticeship system. Conversely, analysts from the transition perspective tend to emphasize the real and perceived barriers that prevent prospective apprentices from pursuing training in the skilled trades. Their focus is therefore on the inputs of an apprenticeship system. From a labour market perspective, those who write from a skills shortage perspective are concerned with meeting labour demand, while transition-focused analysts are concerned with the supply-side of the equation. Interestingly, analysts from both groups tend to highlight similar issues with apprenticeship training. For example, the under-representation of women is both a problem from a transition perspective *and* skills shortage standpoint. If women are unable or unmotivated to pursue careers in the skilled trades, then that has serious consequences for the openness, relevance, and training capacity of the apprenticeship system.

The Challenges Facing Apprenticeship Education

There is agreement within the literature that apprenticeship systems face challenges from both the supply (employers) and demand (potential apprentices) sides of the economic equation. Where identified as a problem, government regulation is typically presented as complicating the proper performance of the system, both from an input and output perspective.

In general, the literature identifies the following as the most pressing issues for modern apprenticeship systems:

Barriers to Entry

- *Negative attitudes towards apprenticeship.* A consistent theme in the apprenticeship literature is the widespread perception that skilled trades represent an inferior career pathway among youth, parents, and employers. As such, potential apprentices are often disinclined to pursue apprenticeship as a postsecondary option.

This problem can be understood in a historical context, as Canada does not have a strong tradition of apprenticeship. Skilled labour requirements

were typically filled through immigration (Conference Board of Canada, 2002). In addition, 'Learning by doing' is often perceived as inferior to academic, classroom-based learning (Gallagher & Kitching, 2003).

The negative attitude towards skilled trades training appears strange when reviewing survey data on student satisfaction with classroom-based postsecondary education. As Anders (2003) observed, students in British Columbia express frustration over the lack of career-specific training in universities and colleges, and yet still do not view apprenticeship as a viable alternative.

- *Lack of information on apprenticeship for students and employers.* Negative attitudes towards apprenticeship are exacerbated by a dearth of relevant information promoting apprenticeship as a viable educational path (Anders, 2003; Canadian Apprenticeship Foundation, 2004; Canada Council on Learning, 2006; Conference Board of Canada, 2002). This problem manifests itself in several ways. Most jurisdictions lack coordinated marketing and outreach campaigns aimed at promoting apprenticeship to youth. In addition, secondary school teachers and guidance counselors often have a poor awareness of the opportunities available in the skilled trades, and are more likely to promote college or university as a preferred educational option.

On the other side of the equation, employers are often unaware of the benefits of engaging apprentices, their responsibilities as apprentice trainers, and the types of supports available to them from provincial governments. In the absence of a co-ordinated marketing campaign, the information void can act as a powerful disincentive to employer participation in apprenticeship training. Thus, problems with the provision of information can limit both the number of individuals interested in pursuing apprenticeship, and the number of available apprenticeship opportunities.

- *Perception of employer costs.* The perceived cost in wages, journeyman instructional time, and lost productivity is often cited as a barrier to greater employer participation in apprenticeship training. However, recent work by the Canadian Apprenticeship Forum (2006) suggests that apprentices actually deliver a net benefit to employers, an average of \$0.38 on every dollar spent on wages and training time. While more work is needed on the Return on Investment (ROI) for employers

who engage apprentices, these findings indicate employers may have an erroneous understanding of the costs of apprenticeship training.

- *Aboriginal individuals, individuals with disabilities, recent immigrants, and women face unique barriers to participation in apprenticeship training.* Numerous studies (CAF, 2004; CCL, 2006; CBC, 2002; Sharpe, 2003; Sharpe & Gibson, 2005; Sweet, 2003) highlight the fact that women, individuals with disabilities, Aboriginal individuals, and recent immigrants are all under-represented in apprenticeship programs. The literature suggests the phenomenon is due to a variety of factors: stereotyping, particularly in male-dominated ‘heavy’ trades; incompatible home cultures and work cultures (particularly for Aboriginal individuals and recent immigrants); an unwillingness on the part of employers to accommodate unique employment requirements; and problems with language and other ‘soft’ skills (again, this applies primarily to recent immigrants and Aboriginal individuals).

These findings are only partially supported by recent Statistics Canada Census data. While women do appear to be under-represented in apprenticeship (women represent only 36.9 per cent of apprenticeship attainment, despite constituting 52 per cent of the total Canadian population), Aboriginal individuals appear to be fairly well represented in the skilled trades, accounting for three per cent of apprenticeship attainment. As Aboriginal individuals represent around four per cent of Canada’s total population, their level of apprenticeship attainment is in-line with their population share (Statistics Canada, 2008).

Issues with system performance

- *The apprenticeship system has not expanded beyond traditional skilled trades.* The vast majority of apprenticeship opportunities remain in the traditional construction, motive power, industrial, and service trades (Sharpe, 2003). Many of these trades are located within stagnant or declining industries. Moreover, ‘growth’ industries, such as information and communication technology, have not embraced the apprenticeship model. Thus, apprenticeship struggles to remain a relevant training option.
- *Inflexibility of program delivery.* There are currently several problems with the delivery of apprenticeship programs. First, the ‘block release’

requirement—where apprentices leave their employer for several weeks to complete the in-class portion of their training—often acts as a disincentive for employers. Losing all of their apprentices for extended periods of time can negatively impact productivity, and makes employers hesitant to engage apprentices.

In addition, apprenticeship training is often narrowly focused on developing specific vocational skills according to a rigid, duration-oriented program. This simultaneously restricts the ability of the apprentice to acquire ‘soft skills’ necessary for labour market success and limits the number of available pathways to complete an apprenticeship. The literature emphasizes the need for greater modularity in the delivery of apprenticeship programs, allowing apprentices to acquire a greater range of skills (CAF, 2004) and benefit from greater flexibility in program delivery. Many analysts (for example, Colleges Ontario, 1997) also suggest that apprentice programs be constructed around competency-based outcomes rather than set duration standards. In other words, the length of the apprenticeship should correspond to the acquisition of specific skills, not an *a priori* and somewhat arbitrary time-in-program requirement. The new Ontario Qualifications Framework (OQF)—which covers vocational training through apprenticeship, private career colleges, colleges of applied arts and technology, and universities—is a move towards a more outcome-based training model in Ontario.⁴ However, it is too early to determine how the OQF may affect the apprenticeship training system in Ontario.

Interestingly, public consultations in British Columbia revealed that many current apprentices are suspicious of more modularized training (Ministry of Advanced Education, 2003). In particular, apprentices in BC worried modularization may ‘pigeon-hole’ apprentices and reduce their earning power in the labour market. It is not entirely clear from the literature why this impression exists, but it may be related to a fear that modularization will limit exposure to more broad-based trade skills, thereby reducing journeyman mobility between organizations.

- *Lack of emphasis on ‘soft’ employability skills.* Many studies suggest that a significant proportion of apprentices lack important literacy, numeracy, and workplace skills, and therefore are ill-prepared for entry into employment (CAF, 2004; CBC, 2002; Lehmann, 2005; Sharpe & Gibson, 2005). This may prevent many prospective employers from taking on

⁴ For more information on the OQF, please visit <http://www.edu.gov.on.ca/eng/general/postsec/oqf.html>.

new apprentices, for fear they will be unable to perform adequately in a workplace environment.

- *Low completion rates.* Evidence from a variety of sources (Sharpe, 2003; Sharpe & Gibson, 2005; Skof, 2006) demonstrates that apprenticeship completion rates in Canada have remained stagnant or declined despite an increase in apprenticeship registrations. While this may be a function of the time it takes most apprentices to complete their programs, this also suggests there may be insufficient supports in place to ensure that registered apprentices are able to complete their training.

External Factors

- *Apprenticeship is vulnerable to variations in the business cycle.* The majority of documents included in the literature review emphasize that fluctuations in the economy can seriously impact the success of an apprenticeship training system. As Skof (2006) observes, the economic downturn of the early 1990s caused a serious decline in the number of yearly apprenticeship registrations. In instances of economic stagnation or recession, employers are simply unable to take on additional workers, including apprentices. Moreover, the fear of future economic instability may prevent employers from engaging in apprenticeship education. Even if the economy is currently enjoying a period of growth, future downturns will make it difficult for employers to provide appropriate support and work-hours for their apprentices. As such, they may decline to take on apprentices at all (CAF, 2004).
- *Poaching remains a significant concern for many employers.* The practice of 'poaching' refers to businesses who hire newly-minted journeypersons away from the employer who trained them. The poaching employer therefore benefits from a trained journeyperson without assuming any of the costs or risks of the apprentice training process (Sharpe & Gibson, 2005). This can act as a powerful disincentive for potential apprentice employers. It should be noted that the majority of the evidence to support the existence of poaching is anecdotal.

Regulatory Issues

- *Apprentice/Journeyperson ratios.* Currently, most jurisdictions impose a minimum journeyperson-to-apprentice ratio on participating employers to

ensure each apprentice receives appropriate instruction and supervision. However, the literature suggests that this requirement makes it difficult for many small and medium enterprises to hire new apprentices, as they may not be able to support a sufficient number of journeypersons within their organization (CAF, 2004).

In recognition of this problem, The Government of Ontario recently adjusted the ratios for brick and stone masons, boilermakers, ironworkers, reinforcing rod workers, and architectural glass and metal technicians. However, it is still too early to assess if these reforms will have a meaningful impact on the number of available apprenticeships in the province.

More research is needed to determine whether the current apprenticeship/journeyperson ratios are appropriate or if they act as a restraint upon the number of available apprenticeship opportunities in Ontario.

- *Lack of interjurisdictional coordination.* The lack of a coordinated national apprenticeship strategy in Canada is often cited as creating regional training disparities (Sharpe, 2003) and restricting the mobility, and earning potential, of journeypersons. This simultaneously limits the opportunities for apprenticeship in some regions, and may discourage potential apprentices from pursuing vocational training in the future. While the Red Seal program is intended to increase interjurisdictional mobility, it only applies to a relatively small number of trades. Conversely, the lack of interjurisdictional co-ordination may minimize poaching between provinces, as firms in one region will be uninterested in apprentices trained in other areas if their qualifications are not locally recognized.

Lessons from Other Jurisdictions

The Canadian Picture

As education is a provincial responsibility, apprenticeship in Canada is properly conceived of as 10 different systems working in parallel. The design of these systems varies from large programs featuring high levels of government support and co-ordination, as in Alberta, to provinces where the traditional apprenticeship alternation model has been largely abandoned in favour of technical training within postsecondary institutions, as in Quebec.

The structure and success of provincial apprenticeship systems appears to be a common concern across Canada. Since 2000, British Columbia, Ontario, Alberta, and Nova Scotia have all conducted reviews, of varying scope and intensity, of their apprenticeship programs. As part of their Campus 2020 program, British Columbia has committed to review its apprenticeship training model again in 2009.

In addition, many Canadian jurisdictions—notably Ontario and Alberta—operate youth apprenticeship programs aimed at high school students. Since this paper is broadly concerned with apprenticeship as a postsecondary pathway, youth apprenticeship programs have not been examined in depth. However, an analysis of youth apprenticeship would be a useful avenue for further research, particularly in terms of how programs of this type interface with traditional apprenticeship at the postsecondary level.

Overall, the literature suggests that almost every province in Canada is struggling with the future of its apprenticeship system. However, it appears that Alberta is currently the national exemplar for a modern vocational training model. It features extensive youth outreach and employer consultation, and emphasizes a high level of public accountability through rigorous reporting requirements. The Alberta system also features excellent financial support for apprentices through Alberta Apprenticeship and Training Scholarships. Indeed, a profile of apprentices in Alberta reveals some impressive successes: in 2005, the average age of apprentices was 25, considerably younger than the national average. Moreover, Alberta has been able to demonstrate impressive growth in both yearly registrations (42.8 per cent) and completions (56.9 per cent)(Alberta Apprenticeship and Industry Training Board, 2006). Alberta also has a higher rate of completion than Ontario—59 per cent as compared to 50 per cent. With these indicators in mind, it may be useful to examine Alberta's apprenticeship system in greater depth to determine strategies appropriate for application in Ontario.

International Apprenticeship Systems

Generally speaking, there is not a great deal of comparative work on how Canada's various provincial apprenticeship systems compare to their international peers. There is broad agreement that Canada's apprenticeship structure is similar to the 'market-oriented' systems of the United States and United Kingdom in that they are largely dependent on employer demand and the willingness of individuals to pursue apprenticeship training (Sharpe & Gordon, 2005). This is in contrast to apprenticeship systems in Continental Europe that tend to emphasize greater government co-ordination or corporatist decision-making, involving complex relationships between government, employers, unions, postsecondary institutions, and students.

Germany is repeatedly held up in the literature as a model of a high-functioning apprenticeship training system. Embracing a corporatist decision-making model, it is highly efficient at moving youth from secondary school into apprenticeship, and apprenticeship is a pathway relevant to a much broader range of career outcomes in the service and high-tech industries (Sharpe & Gibson, 2005; Lehmann, 2005). Vocational training through apprenticeship is a valued form of higher education in Germany, free of the stigmas found in Canada. Germany also has a much higher retention and completion rate than other peer jurisdictions. However, it is generally agreed that Canada lacks the historical structures necessary to support a system similar to the German model (Lehmann, 2005; Sharpe & Gibson, 2005). Canada's antagonistic model of labour relations and history of collective bargaining does not lend itself to German-style co-operative structures. Moreover, the German system relies on early and intensive student streaming in secondary school, on a much larger scale than in Ontario. In addition, some analysts (for example, Heinz, 2003) suggest Germany's apprenticeship system is becoming increasingly unwieldy in the context of a global economy, and may in fact limit innovation and flexibility in vocational training. Germany has recently completed a series of reforms to its vocational training system aimed at improving the efficiency and flexibility of the German system.

Overall, the current state of research into international apprenticeship systems from a Canadian or Ontario perspective does not allow for meaningful analysis of potential promising practices. More research into this area is both appropriate and desirable.

Recent Developments in Ontario – The Compulsory Certification Review

On August 2, 2008, the MTCU engaged lawyer, author, and public policy advisor Tim Armstrong to consider “the impact of expanding compulsory/restricted certification under the *Trades Qualification and Apprenticeship Act (TQAA)* and the *Apprenticeship and Certification Act (ACA)*” (Armstrong, 2008). In short, Armstrong was tasked with investigating whether more skilled trades in Ontario should be made compulsory certification trades, requiring the completion of an apprenticeship before entry to practice. His analysis was to focus on implications for health and safety, the registration of new apprentices, completion rates, and economic implications of an expanded compulsory certification system.

The final report of the Compulsory Certification Review (otherwise known as “The Armstrong Report”) was submitted on May 22, 2008. It found the following:

- Registration and completion rates are higher in compulsory certification trades. Thus, an expansion of compulsory certification would likely lead to improved system performance in these areas.
- Given that compulsory certification trades carry a greater emphasis on health and safety, an expansion of compulsory certification to additional trade areas would improve occupational health and safety within those trades.
- Wages would likely increase within new compulsory certification trades. This additional cost to employers would be offset by productivity gains, retention benefits, reduced risk of skill shortages, and improved health and safety performance.
- However, there are several counterbalancing factors that accompany compulsory trade designation:
 - Limitations in labour supply due to overly stringent journey-person-apprentice ratios;
 - Restrictions on worker mobility in the labour market;
 - The creation of excessive complexity in trades that do not require the enhanced training and safety requirements of a compulsory certification trade; and
 - Micro-labour market issues (e.g. urban vs. rural) may complicate the expansion of compulsory certification.

Armstrong recommends a new governance structure to pre-figure any expansion of the compulsory certification system in Ontario. Specifically, Armstrong recommends:

- MTCU consults with stakeholders to establish a new, all-trades governance institution—a College of Trades. This new body would consider applications for compulsory certification; engage in certification enforcement; raise the profile and status of trades; and provide for periodic review of apprenticeship ratios.
- This new body will evaluate applications for compulsory certification against the public interest, including health and safety, economic impact, impact on apprentice-journey-person ratios, appropriateness of

compulsory certification to the given trade, labour mobility, and implications for those currently working in the trade area.

- Improvements to the existing data collection and retrieval systems to allow meaningful statistical comparisons between voluntary and compulsory trades.
- The development of an all-inclusive statute to replace the ACA and TQAA.

On September 16, 2008, Minister of Training, Colleges and Universities John Milloy announced the creation of an Ontario College of Trades, fulfilling a key element of Armstrong's recommendations. However, the extent of the new body's regulatory and enforcement powers have not been defined. Kevin Whitaker, chair of the Ontario Labour Relations Board (OLRB) and labour law specialist, was appointed by Minister Milloy to develop the OCT's governance structure, scope and mandate through consultation with stakeholders. According to the MTCU website, Mr. Whitaker will also provide a detailed implementation plan, and his work will address a number of issues that affect the skilled trades sector, including compulsory certification, apprenticeship ratios and enforcement functions.

Next Steps

There is a clear need for Ontario-specific apprenticeship research to better understand how this postsecondary pathway is and isn't working for Ontario's students.

The following types of projects could be immensely valuable in allowing HEQCO to better understand apprenticeship in Ontario.

Analysis of Policy Issues for Ontario

- It is not clear whether Ontario currently has an appropriate number of individuals with a skilled trades certification acquired through an apprenticeship program. Therefore, an analysis of labour needs relative to the current performance of the apprenticeship system would allow HEQCO to understand whether the apprenticeship system is a) meeting Ontario's needs, b) producing a sufficient number of apprentices but in the wrong labour areas, or c) producing a generally inadequate number of skilled tradespeople to meet the province's requirements.

- An examination of how existing government regulations help or hinder the success of apprenticeship in Ontario.
- An Ontario-specific examination of the economic return on investment from apprenticeship training, broken down by both trade type and region.
- An exploration of how greater flexibility can be built into Ontario's apprenticeship system through innovations in modes of program delivery.
- An analysis of apprenticeship completion and retention rates to determine the reasons for poor system performance in this area.
- An exploration of how the apprenticeship system can adapt to the growing importance of 'soft skills' (particularly literacy, numeracy, and communication skills) to labour market success—higher entrance requirements, academic upgrading or other approaches?
- A study to determine if there are any differences in outcomes for youth and adult apprentices.
- An exploration of how the apprenticeship model can be expanded to a greater variety of trade areas, particularly in growth areas of the Ontario economy, and act as an additional educational pathway for students in these fields.
- The effectiveness of Ontario's youth apprenticeship program in facilitating transition into postsecondary apprenticeship training.

Analysis of Potential Promising Practices from Peer Jurisdictions

- An examination of international trends in apprenticeship training.
- An international environment scan aimed at gleaning successful strategies for promoting and improving apprenticeship programs in Ontario.
- An in-depth review of Alberta's apprenticeship system, with the goal of gleaning best practices for application in Ontario.

Qualitative and Quantitative Research on Key Ontario Stakeholder Perspectives

- Focus-group research with representatives from key stakeholders in Ontario's apprenticeship system, including the colleges of applied arts and technologies, to determine their specific concerns over the province's apprenticeship system.
- Survey Ontario employers to gain a better understanding of their attitudes towards apprenticeship.

- Survey youth to gain a better understanding of perceived barriers to pursuing apprenticeship education in Ontario.

Annotated Bibliography

Alberta Apprenticeship and Industry Training Board (2006) *Building Opportunity: 2005-06 Annual Report*. Edmonton: Alberta Advanced Education.

This report reflects the Government of Alberta's ongoing work to expand and improve the province's apprenticeship system, and to ensure it does so in an open and accountable way. The report details the Alberta Apprenticeship and Industry Training Board's (AAITB) efforts to promote apprenticeship to a variety of groups, including youth, aboriginal individuals, and women. The report also provides evidence on recent changes to several trades and details efforts to create a network of Industry representatives to discuss apprenticeship issues. There is also a substantial 'celebrating excellence' section, detailing the AAITB Excellence awards and the AAITB's scholarship and skills development programs.

The AAITB has been releasing annual reports since 1997.

Andres, L (2003) *More than Sorcery Required: The Challenge of Matching Education and Skills for Life and Work*. In Shuetze, H & Sweet, R (eds.) Integrating School and Workplace Learning in Canada: Practices and Principles of Alternation Education and Training. Montreal: McGill-Queen's University Press. 113-134.

This paper uses survey methodology to assess postsecondary decision-making among youth in British Columbia between 1989 and 1993. The survey found that apprenticeship accounts for only a fraction of postsecondary participation (around five per cent, as opposed to 31 per cent for university), and that apprenticeship remains heavily gendered. Women are far less likely to pursue training in the skilled trades, and when they do, they are more likely to participate in traditionally female trades, such as hospitality, beauty or accountancy.

The low participation in apprenticeship is surprising, since the survey also revealed a widespread dissatisfaction with how university education fails to provide students with skills and experience relevant to the workforce.

The paper concludes by suggesting that secondary school teachers and guidance counselors have a greater role to play in recognizing apprenticeship as a viable postsecondary opportunity able to satisfy the career goals of students.

Armstrong, Tim (2008) *The Compulsory Certification Project*. Toronto: Queen's Printer for Ontario. Available at <http://www.edu.gov.on.ca/eng/ccr/index.html>.

This report reflects consultant Tim Armstrong's examination of Ontario's apprenticeship system. Armstrong was asked by MTCU to consider "the impact of expanding compulsory/restricted certification under the *Trades Qualification and Apprenticeship Act (TQAA)* and the *Apprenticeship and Certification Act (ACA)*" (Armstrong, 2008). In short, Armstrong was tasked with investigating whether more skilled trades in Ontario should be made compulsory certification trades, requiring the completion of an apprenticeship before entry to practice. His analysis was to focus on implications for health and safety, the registration of new apprentices, completion rates, economic factors, and any other factors relevant to an analysis of compulsory certification.

Armstrong found the following:

- Registration and completion rates are higher in compulsory certification trades. Thus, an expansion of compulsory certification would likely lead to improved system performance in these areas.
- Given that compulsory certification trades carry a greater emphasis on health and safety, an expansion of compulsory certification to additional trade areas would improve occupational health and safety within those trades.
- Wages would likely increase within new compulsory certification trades. This additional cost to employers would be offset by productivity gains, retention benefits, reduced risk of skill shortages, and improved health and safety performance.
- However, there are several counterbalancing factors that accompany compulsory trade designation:
 - Limitations in labour supply due to overly stringent journeyperson-apprentice ratios; restrictions on worker mobility in the labour market;
 - Excessive complexity in trades that do not require the enhanced training and safety requirements of a compulsory certification trade; and

- Micro-labour market issues (e.g. urban vs. rural) may complicate the expansion of compulsory certification.

Armstrong recommends a new governance structure to pre-figure any expansion of the compulsory certification system in Ontario. Specifically, Armstrong recommends:

- MTCU consults with stakeholders to establish a new, all-trades governance institution—a College of Trades. This new body would consider applications for compulsory certification; engage in certification enforcement; raise the profile and status of trades; and provide for periodic review of apprenticeship ratios.
- This new body will evaluate applications for compulsory certification against the public interest, including health and safety, economic impact, impact on apprentice-journeyman ratios, appropriateness to the given trade, labour mobility, and implications for those currently working in the trade area.
- Improvements to the existing data collection and retrieval systems to allow meaningful statistical comparisons between voluntary and compulsory trades.
- The development of an all-inclusive statute to replace the ACA and TQAA.

Association of Colleges of Applied Arts and Technology of Ontario (1997) *Apprenticeship 2000: Ontario Community Colleges' Vision for the 21st Century*. Toronto: Association of Colleges of Applied Arts and Technology of Ontario.

This government submission broadly outlines Association of Colleges of Applied Arts and Technology of Ontario's (ACAATO) (now Colleges Ontario) goals for the apprenticeship system:

- Flexibility through innovative approaches in program delivery to meet apprentice and employer 'just-in-time' training needs;
- Cost-effective 'in-school' training to reduce costs for students;
- Access to further training and certification for individuals with work experience or who meet established entry requirements—greater and more efficient recognition of prior learning;

- Portability of apprenticeship credentials between training and education systems, employers, and jurisdictions;
- Increased investment in apprenticeship by all partners;
- Increased industry ownership of apprenticeship programs;
- Competency-based outcome standards, as opposed to duration requirements; and
- Cost-efficient and streamlined administration and client services.

In addition the paper expresses many of the concerns over apprenticeship indicated elsewhere in the literature, including instability of funding (especially after the withdrawal of federal support), and the need to equip apprentices with basic 'soft' employability skills for the workforce, including numeracy and literacy.

Canadian Apprenticeship Forum (2004) *Accessing and Completing Apprenticeship Training In Canada: Perceptions of Barriers*. Ottawa: Government of Canada.

Through a series of stakeholder interviews, focus groups, and a comprehensive review of existing literature, this paper identifies nine major perceived barriers to the apprenticeship system in Canada:

- Negative attitudes to apprenticeship and a poor image of the trades on the part of young people, parents, and employers.
- A lack of information and awareness of apprenticeships often reinforced by a lack of support for trades among school teachers and guidance counselors, and within school curricula.
- Some apprentices, particularly women, Aboriginal people, members of visible minority groups, recent immigrants, and persons with disabilities, face a number of barriers that can create an unwelcoming workplace or training environment.
- High cost of apprenticeship to individuals (tuition and tools), unions and employers, including wage and supervision costs. Employer costs are particularly severe for small businesses.
- Strong concerns among employers, unions, and individuals over the impacts of economic factors that lead to a lack of work hours and thus interruption or termination of apprenticeships.
- Concerns about the lack of resources to support apprenticeship, including resources in secondary schools, communities, and agencies providing service to communities or groups of individuals.
- Concerns about the basic and essential skills of apprentices.

- Shortcomings of workplace-based and technical training—inflexible block release arrangements, lack of flexible technical training options, lack of mentorship programs, and journeypersons unprepared for roles as trainers and mentors.
- Issues regarding regulations governing apprenticeship, such as inflexible journeyperson/apprenticeship ratios and licensing requirements and the absence of national standards or core curricula in many trades.

The paper notes that these barriers are particularly problematic for women, Aboriginal individuals, recent immigrants, visible minorities, and persons with disabilities.

To address these issues, the paper recommends:

- Embracing policies that change perceptions and attitudes towards the trades.
- Increase efforts within secondary schools to support and promote the trades through counseling, information, promotional programs and enhanced teacher awareness.
- Develop more welcoming workplace cultures for individuals from under-represented groups.
- Address costs encountered in initiating apprenticeship programs, as well as costs faced by apprentices in pursuing apprenticeship programs.
- Mitigate the impact of economic factors that can lead to a lack of work and interruption or termination of apprenticeships.
 - Provide for more geographic and employer mobility among apprentices, as well as more flexible technical training periods.
- Reassess the adequacy of resources dedicated to apprenticeship.
- Provide the essential skills (numeracy, literacy, computer skills, and other 'soft' skills) that enhance success in apprenticeship programs.
- Provide flexible and accessible technical training programs.
- Seek to harmonize rules, regulations, and standards affecting trades and apprenticeships across Canada.

Canadian Apprenticeship Forum (2006) *Apprenticeship—Building a Skilled Workforce for a Strong Bottom Line*. Ottawa: Canadian Apprenticeship Forum.

This paper attempts to assess whether apprenticeship delivers a net benefit or net cost to employers. By comparing an employer's costs (wages and benefits, opportunity costs, disbursements, and administration) with benefits (revenue generated by apprentice, applicable tax credits), the paper concludes that apprenticeship delivers a net benefit, over the course of an apprenticeship program, to all 15 trades surveyed in the paper. On average, for every dollar spent on apprentice training, an employer receives a return of \$1.38. In addition, the report found that revenue generated by an apprentice increases over the course of their program, while costs related to journey person time spent training apprentices declines over each year of an apprenticeship.

As part of its research project, the paper also conducted a qualitative survey of employers. Overall, employers cite the need for skilled labour as the most important reason to engage apprentices. In addition, employers felt apprentices help improve the skills and productivity of journeypersons, and the benefits for an employer who trains its own journeypersons through apprenticeship includes higher overall productivity.

The paper also highlights that fears over 'poaching'—or the loss of apprentices to competitors, different industries or other regions—remains a serious concern for many employers, particularly in Atlantic Canada and Saskatchewan.

Canadian Council on Learning (2006) *Apprenticeship Training in Canada*. Ottawa: Canada Council on Learning. <http://www.ccl-cca.ca/CCL/Reports/LessonsInLearning/apprenticeship-LinL.htm>.

In this paper, the CCL conceptualizes apprenticeship training as a means to address 'looming' skills shortages and youth unemployment. According to the report, the skilled trades workforce is aging faster than other segments of the labour market, creating the potential for shortages in these fields. This problem is compounded by the fact that youth are discouraged or disinclined to pursue employment in the skilled trades, immigrants to Canada do not enter the trades in large numbers, and that participation in apprenticeship by women remains low.

The report also notes that youth who do not possess a postsecondary credential increasingly struggle to find stable employment. It is suggested that apprenticeship can act as an effective transitional tool to assist these individuals into the labour market.

However, the CCL concludes that apprenticeship is still not a preferred postsecondary pathway in Canada, remaining largely the domain of older workers. Moreover, there is evidence to suggest the rate of apprenticeship completion is falling.

The report also notes that employers are reluctant to hire apprentices due to the perceived cost and risk. To counter this, CCL suggest governments become more active in encouraging employers to participate in apprenticeship training. Recent initiatives such as tax credits for apprenticeships in Ontario and British Columbia were lauded as important first steps. In addition, the report calls for efforts to overcome perceived individual barriers to apprenticeship to encourage more youth to follow this pathway.

Conference Board of Canada (2002) *Solving the Skilled Trades Shortage*. Toronto: The Conference Board of Canada.

This submission to Human Resources and Social Development Canada (HRSDC) begins with the historical observation that Canada does not have a strong tradition of apprenticeship, and has tended to satisfy its skilled labour requirements through immigration. As such, there is little in the mainstream education system that encourages youth to pursue skilled trades following secondary school. Unlike the relatively streamlined application process for universities and career colleges, applying for an apprenticeship is very complex. Prospective apprentices must:

- Find an employer who wants to handle an apprentice;
- Contact, or have the employer contact, an MTCU training consultant;
- Have the training consultant meet with them and their employer at the workplace to assess the employer's ability to train; and
- Sign an apprenticeship contract, which registers them as an apprentice.

Years of treating the skilled trades as a secondary career path have diminished the status of these occupations in the eyes of youth. This is not helped by survey results that suggest higher rates of unemployment and lower earnings of apprenticeship graduates. Indeed, the skilled trades appear to suffer from the seemingly paradoxical problem of high levels of unemployment in the trades coinciding with claims of skilled labour shortages. This can arise when a perceived shortage becomes an actual shortage irrespective of actual labour market circumstances—the result of mobility constraints, inappropriate/incomplete skill sets, or imperfections in information preventing individuals from moving into vacant positions. Overall, it seems clear the labour market is not efficiently satisfying employer requirements, particularly where skilled trades are concerned.

The paper explores three broad sets of barriers to success in the apprenticeship system, and proposes various solutions to these challenges.

Barriers to youth include:

- Unattractiveness of the skilled trades;
- Lack of proper information;
- Rational behavior—apprenticeship is perceived to be relatively high-risk when compared to other forms of higher education;
- Lack of awareness of employer expectations; and
- Lack of clear career paths.

To address these barriers, the paper suggests:

- Improved communications aimed at changing attitudes, delineating clear career paths, and programs to build ‘soft’ skills and qualifications.

Barriers to employers include:

- Attracting youth (for attitudinal reasons discussed above);
- Lack of a business case for engaging apprentices;
- Lack of information;
- The lack of coherent interjurisdictional training standards;
- Mismatches of workplace schedule and training system (such as block release requirements);
- Stereotyping of particular groups (women, Aboriginals, individuals with disabilities), preventing their movement into apprenticeship;
- Perceived lack of loyalty (worries about poaching externalities); and
- Employer management practices.

To address these barriers, the paper suggests:

- Employers, like youth, require a communications strategy aimed at changing their perceptions and behaviours.
- Employers also need a ‘business case-in-a-box’ to assist with apprenticeship decision-making.

Barriers to institutional co-ordination include:

- Lack of institutional connectivity;
- Lack of immediate and compelling reasons to co-operate;

- Lack of institutional responsiveness;
- Credentialing; and
- The 'closed shop'—or limiting the number of new apprentices in the interest of unionized workers.

To address these barriers, the paper suggests:

- Integration, cooperation, and shared risk should be the founding principles for a process of open consultation and negotiation aimed at developing a more seamless apprenticeship system

Department of Education (2002) *Apprenticeship in Nova Scotia: A Discussion Paper*. Halifax: Government of Nova Scotia.

Citing the effects of both economic growth and changes in the economic structure of Nova Scotia, this discussion paper suggests the existing provincial apprenticeship system is in need of reform to ensure it meets the needs of the citizens and industry of Nova Scotia.

In particular, the paper notes some general challenges:

- Workers want to possess a variety of skills that make them more flexible in the workplace.
- The business community wants less regulation.
- The system will be under increasing demand, but financial support for apprenticeship may not grow at the same rate.
- Taxpayers want greater accountability for the system.
- Most students would prefer to attend college or university.
- Students are often unaware of the opportunities available in apprenticeship, particularly in the industrial and motive power trades.

To address these issues, the paper structures discussion around nine areas:

- A new vision for apprenticeship in Nova Scotia.
- The scope of industry's role in apprenticeship training.
- Role, function, and make-up of the Provincial Apprenticeship Board.
- Role and Function of the Apprenticeship Training Division of the Department of Education.
- The regulatory framework for apprenticeship.
- Role of youth in apprenticeship.

- Funding of apprenticeship
- Greater variety of training options within the traditional trades.
- Roles of employers and apprentices in apprenticeship training.

Department of Education (2002) *Apprenticeship: Achieving Excellence Through Partnership*. Halifax: Government of Nova Scotia.

This paper reflects the outcomes of the public consultations initiated by Nova Scotia's Department of Education concerning the structure of the provincial apprenticeship system. The report makes 25 recommendations, broadly covering the following:

- System design, including multi-year strategy and funding plans, the development of performance measures, and an overall expansion of apprenticeship in Nova Scotia.
- Adjustment of the governance structure, including a review of the Provincial Apprenticeship Board (PAB), appointing members of the PAB from stakeholder nominees, and establishing a new system of trade advisory committees.
- A new funding structure, where costs are shared between employers, apprentices, and government. The report also suggests user fees be reviewed.
- Creation of flexible training options.
- Expanded pre-employment training programs and the creation of a pilot youth apprenticeship program.
- Education and outreach programs directed at employers and youth.
- Review the scope and impact of compulsory certification.
- Amend existing legislation to reflect the recommendations.

Gallagher, P & Kitching, A (2003) *Canada's Community Colleges and Alternation*. In Shuetze, H & Sweet, R (eds.) Integrating School and Workplace Learning in Canada: Practices and Principles of Alternation Education and Training. Montreal: McGill-Queen's University Press. 156-174.

Gallagher and Kitching assess the success of Canadian community colleges as gateways to labour market entry for youth. The paper also deals with the interaction of the apprenticeship system with community colleges across Canada.

Prior to the advent of provincial community college systems, apprenticeship was administered almost exclusively by employers and senior tradespersons. It operated amidst the widespread assumption that 'learning by doing' was separate from, and inferior to, more academic education.

This bias was incorporated in the new community college systems, as the 'theoretical' components of apprenticeship were moved into the new institutions. This created an unforeseen barrier to apprenticeship educations, as the 'block release' educational requirement made hiring apprentices unattractive to many employers.

Heinz, W (2003) *The Restructuring of Work and the Modernization of Vocational Training in Germany*. In Shuetze, H & Sweet, R (eds.) Integrating School and Workplace Learning in Canada: Practices and Principles of Alternation Education and Training. Montreal: McGill-Queen's University Press. 25-43.

This chapter takes issue with the widespread belief that Germany represents a model of vocational training that effectively balances the needs of students seeking job training and the requirements of employers.

The heavy educational streaming that occurs in the German system (between vocational training, polytechnic colleges, and universities) produces results frequently out of sync with the educational aspirations of students and parents.

The German vocational education system is struggling to cope with the increasing flexibility demanded by globalized, post-Fordist economies. Apprenticeship is increasingly seen by students as a platform for a variety of career paths rather than a form of job-specific training. There is also a perception that the design of the vocational education system may act as a barrier to economic restructuring.

In contrast to Canada and the US, German apprenticeship continues to emphasize more long-term employment planning and relies on a corporatist public policy structure.

Lehmann, W (2005) *I'm Still Scrubbing the Floors: Experiencing Youth Apprenticeships in Canada and Germany*. Work, Employment and Society. 19(1). 107-129.

Proceeding from a school-to-work transition perspective, Lehmann compares the effectiveness of Alberta Registered Apprenticeship Program (RAP) and Germany's dual apprenticeship system. He finds that the German system is far more effective at providing information to prospective and current apprentices,

and is more efficient at providing participants with 'soft' employability skills such as critical thinking and problem solving. German apprentices also had a clearer sense of the career paths available to them. However, as Lehmann notes, the greater efficiencies of the German system come at the cost of flexibility: the highly corporatist structure of the apprenticeship system leaves little room for innovation. In addition, the German system also relies heavily on 'streaming' within secondary school, severely restricting the career choices of students.

Lehmann also concludes that the German model would not translate well into the Canadian context. The structures, history of joint decision making, and widespread employer commitment to training is largely absent in the Canadian system.

Ministry of Advanced Education (2002) *Discussion Paper: A New Model for Industry Training in British Columbia*. Victoria: Government of British Columbia.

This paper reflects the efforts of British Columbia's Ministry of Advanced Education to re-structure the province's apprenticeship and vocational training system. In general, the paper contains concerns over the state of apprenticeship training expressed in national-level or theoretical literature. In particular, the paper notes:

- The inability of the system to adequately respond to the economy's need for particular skilled trades.
- Inflexible, time-based training methods acting as a barrier to innovation in training design and delivery.
- Low completion rates.
- Lack of appeal of skilled trades among youth.
- Lack of employer participation.
- Looming skilled trades shortages.

To address these issues, the paper proposes a new training system. Its key elements include:

- A new Industry Training Authority with representation from trainers, employers, and government.
- A new modularized training system that provides multiple pathways for learners. Traditional apprenticeship structures will be complemented by a greater emphasis on public and private trainers and postsecondary institutions.
- Greater flexibility in credentials.

- Greater focus on attracting secondary school graduates.

Ministry of Advanced Education (2003) *Consultation Summary of the New Model for Industry Training for British Columbia*. Victoria: Government of British Columbia.

This paper contains stakeholder feedback concerning the Ministry of Advanced Education's *Discussion Paper: A New Model for Industry Training in British Columbia*.

In general, stakeholders appeared to be broadly supportive of the new structure. Employers in particular appreciated the flexibility of the proposed system, emphasizing that a 'one-size-fits-all' approach does not meet the need of individual businesses. Employers also felt the continuation of the 'Red Seal' certification was important to ensure quality and mobility of skilled labour. This group remains concerned over the future availability of skilled tradespeople.

Trainers remained concerned over a lack of opportunities for apprentices due to the unwillingness of employers to engage them in employment. They also felt more should be done to market vocational training opportunities to youth.

Current apprentices expressed concerns that modularized training would pigeon-hole those involved in apprenticeship training, preventing them from gaining broad skills and reducing their earning power. They were also worried that the new system would shorten the apprenticeship process, depriving apprentices of important on-the-job training.

Unions were worried the new system would not adequately address the unwillingness of employers to engage apprentices for the purposes of training.

Ministry of Education (2007) *Ontario's Apprenticeship and Certification System: Background Paper Prepared for the Compulsory Certification Review*. Toronto: Government of Ontario.

Compulsory certification means that an individual must hold a valid certificate of qualification or be registered as an apprentice in a given trade to work or be employed in that trade. Currently, there are 21 compulsory certification trades in Ontario. Trades without this requirement are referred to as voluntary certification trades.

Prepared in advance of an upcoming review on Ontario's compulsory certification system, this paper outlines the legislative history of apprenticeship training in Ontario, as well as an overview of the current system.

Ontario's current compulsory certification system began in 1944 in the automotive repair industry and was expanded throughout the 20th century. However, apprenticeship training in Ontario lost both popularity and effectiveness throughout the 1950s and 1960s. In response, the provincial government struck a select committee to investigate the apprenticeship system. In response to their report, the government introduced the *Apprenticeship and Tradesman's Qualification Act*, which in 1990 was renamed the *Trades Qualifications and Apprenticeship Act (TQAA)*. This new act was instrumental in spreading compulsory certification to new industries, largely in a bid to give these trades greater credibility.

Through an extensive stakeholder consultation process, the *Apprenticeship and Certification Act (ACA)* was passed in 1998. This new act governed trade designation, the certification process, and allowed 'skill sets' to be considered for certification, as well as 'trades'. Construction trades remain under the authority of the TQAA.

Under the current ACA system, the apprenticeship system in Ontario is a partnership between apprentices, employers, business and labour representatives, colleges of applied arts and technology, the provincial government, and the federal government. There are more than 140 apprenticeship trades in Ontario, including the 21 that require certification. These compulsory certification trades are concentrated in the construction and motive power sectors, in addition to hairstyling.

Currently, employers cover between 75-90 per cent of the cost of training, primarily reflected in the cost of journeyperson instruction in Ontario. The provincial government covers a portion of the cost of in-school training, funds apprentices to purchase tools and equipment, and funds the administration of the system including service for employers and apprentices. Beginning in 2002, apprentices were charged fees for their in-school education, at \$10 for each six hour unit. Typically, this translates into \$400 for an 8 week training period.

On May 16, 2007, the Ministry of Training, Colleges and Universities announced it would review the compulsory certification system. Specifically, the review aims to determine whether compulsory certification should be extended to more skilled trades. A report is expected in early 2008.

Payeur, C, Emond, N, & Caron, L (2003) *Toward a Regional Approach To Alternation Education and Training: The Case of Quebec*. In Shuetze, H & Sweet, R (eds.) Integrating School and Workplace Learning in Canada: Practices and Principles of Alternation Education and Training. Montreal: McGill-Queen's University Press. 44-65.

This paper argues that a 'regional approach' that takes into account local workplace relations, social structure and economic realities important to assessing the question of alternation education and training.

Quebec is unique in Canada in that it relies exclusively on secondary and tertiary educational institutions to deliver vocational training. The apprenticeship system was abolished in 1964, and briefly revived in 1997 before once again being shut down.

Alternation programs remain a popular means of delivering vocational training in Quebec.

There is currently very little co-ordination between the Secondary Institutions and cégeps in the delivery of vocational training. Overall, the province is indicative of how alternation training systems can be constrained both by local (employers, unions) and external (federal government, global economy) actors.

Sharpe, A (2003) *Apprenticeship in Canada: A Training System Under Siege?* In Shuetze, H & Sweet, R (eds.) Integrating School and Workplace Learning in Canada: Practices and Principles of Alternation Education and Training. Montreal: McGill-Queen's University Press. 243-259.

Sharpe's paper identifies several weaknesses in Canada's current apprenticeship system:

- The stagnation of new apprentice registrations in the 1990s relative to the rest of the postsecondary sector.
- The inability of the apprenticeship system to expand beyond traditional fields into newer industries, such as business/commerce, health sciences, ICTs, natural sciences, and social sciences.
- The inability of the apprenticeship system to expand the proportion of women registrants.
- Uneven apprenticeship development between provinces, leading to regional disparities in access to apprenticeship programs.
- Low level of completion rates for apprenticeship programs, and the continuing downward trend in completion rates.

Sharpe concludes that remedial policy should be focused on increasing the retention and time of completion for apprentices; the expansion of apprenticeship into new fields; and increasing the number of women who pursue apprenticeship.

Sharpe, A. & Gibson, J. (2005). The Apprenticeship System in Canada: Trends and Issues. Ottawa: Centre for the Study of Living Standards.

This report explores the Canadian apprenticeship system in context of the dual 'school-to-work' and 'skills shortage' policy agendas. In particular, the report seeks to address the following questions:

- What factors affect employer demand for apprentices?
- What factors affect students' decisions to enter the apprenticeship system?
- What is the principal constraint on apprenticeship registration?
- What accounts for the low apprenticeship completion rates relative to other forms of postsecondary education?
- Given the constraints, what is the most appropriate role for the apprenticeship system within the postsecondary system as a whole, from both a school-to-work and a skills deficit perspective?
- What kinds of reform may achieve this role?

The paper contains a useful jurisdictional comparison of apprenticeship systems. France and Germany are recognized as having particularly successful systems. Both these nations utilize extensive third sector (labour unions, industry organizations) regulation combined with targeted government intervention. The US, UK and Canada use a more market-oriented method for regulating apprenticeship, leading to a general rather than vocational focus in their respective postsecondary education systems.

The paper highlights the following trends in apprenticeship education in Canada:

- Since 1977, apprenticeship has grown at a rate comparable with the overall higher education system, although it remains a small part of the postsecondary sector.
- Apprenticeship registration is cyclical and corresponds to the unemployment rate.
- Apprenticeship registration varies by trade group, province, and gender.
- The number of female apprentices grew throughout the 1990s. However, this growth was concentrated in particular fields (food and service trades). The share of female registration in 'traditional' trades (construction, electrical, heavy equipment) actually fell between 1991 and 2002.
- While apprenticeship registration has grown substantially, the number of completions has not grown proportionally.

The paper also identifies employment instability and a negative societal perception of the trades as serious barriers to increased apprenticeship registration and completion rates.

The paper concludes that the market for apprenticeships is principally constrained by employer demand rather than supply of potential apprentices. Therefore, reform of the apprenticeship system in Canada should focus on three main principles:

- Improving the quality, rather than quantity, of apprenticeship candidates.
- Financial incentives directed towards firms, rather than apprentices.
- The creation of strong apprenticeship sectoral committees to improve apprenticeship and help employers make investments in training.

The paper also advocates ‘laddering’ apprenticeship into the postsecondary education system, and opting for a more modularized delivery format.

Shuetze, H & Sweet, R (2003) *Integrating School and Workplace Learning in Canada: And Introduction to Alternation Education Concepts and Issues*. In Shuetze, H & Sweet, R (eds.) Integrating School and Workplace Learning in Canada: Practices and Principles of Alternation Education and Training. Montreal: McGill-Queen’s University Press. 3-21.

This paper positions apprenticeship as a form of alternation education, primarily designed to combine classroom learning with the experiential and cognitive learning of workplace-based education. Apprenticeship is also viewed as a kind of systematic training, where workplace is considered central to the acquisition of experience-based skills.

The paper examines apprenticeship through the school-to-work transition policy rubric. Alternation education programs, such as apprenticeship, are viewed as a means to better improve the relationship of learning to actual job requirements.

Shuetze, H & Sweet, R (2003) *New Policy and Research Directions*. In Shuetze, H & Sweet, R (eds.) Integrating School and Workplace Learning in Canada: Practices and Principles of Alternation Education and Training. Montreal: McGill-Queen’s University Press. 276-286.

In their concluding chapter, Shuetze and Sweet identify the following as barriers to successful alternation programs:

- Workplace equity;
- Public attitudes to vocational work;

- Employer attitudes to vocational work, specifically the view that it represents a cost and not a benefit; and
- A retreat of government from a supporting/co-ordinating role in alternation training.

The authors note that many Canadian jurisdictions, especially Alberta, are in the midst of transforming their apprenticeship systems. They conclude by calling for greater government support of alternation training, both in terms of playing a co-ordinating role among students, institutions, and employers, and providing financial support to participants and employers.

Shuetze, H (2003) *Alternation Education and Training in Canada*. In Shuetze, H & Sweet, R (eds.) Integrating School and Workplace Learning in Canada: Practices and Principles of Alternation Education and Training. Montreal: McGill-Queen's University Press. 64-92.

Canada is in the midst of a transition to a reality where information and knowledge are the core parts of all economic activity. This poses unique challenges for the vocational training system. To respond, both school and workplace-based forms of alternation education need to integrate elements of each other in order to deliver results to Canadians. Ideally, apprenticeship represents this kind of work/school fusion.

There are three primary models of alternation training in Canada:

- *Secondary*
- *Post-Secondary*
- *Workplace*

The devaluing of apprenticeship and other forms of alternation training is in part due to their historic association with programs for 'at-risk' learners and low academic performers. This low standing is complicated by a lack of a 'tradition of social co-operation' between employers, unions, government and educational institutions necessary for a high-functioning vocational training system. This is partially due to the decentralized and adversarial state of industrial relations in Canada.

At present, the Canadian apprenticeship system is primarily a system for educating adult workers. It does not function significantly to increase the overall skill level of Canadians, nor as an effective school-to-work transition strategy.

Skof, K (2006) *Trends in Registered Apprenticeship Training in Canada*. Ottawa: Statistics Canada. <http://www.statcan.ca/english/freepub/81-004-XIE/2006002/reappr.htm>.

Using data from Statistics Canada's Registered Apprenticeship Information System (RAIS), Skof makes the following observations:

- The average age of apprentices increased from 29.4 in 1993 to 30.1 in 2003. However, this average masks several other interesting age-related trends, including the a nearly five-fold increase in the number off apprentices under 20, rising from 3,600 in 1993 to 15,500 in 2003.
- Apprenticeship registrations and completions are sensitive to business cycles, rising during time of economic growth and falling sharply during downturns and recessions.
- The number of apprenticeship completions has not kept pace with the growth in registrations, suggesting retention problems. In recent years, the number of completions has remained static.

Sweet, R (2003) *Women and Apprenticeships: The Role of Personal Agency in Transition Success*. In Shuetze, H & Sweet, R (eds.) *Integrating School and Workplace Learning in Canada: Practices and Principles of Alternation Education and Training*. Montreal: McGill-Queen's University Press. 260-275.

Sweet highlights the growing uncertainty in school-to-work transitions, increasing the importance of personal agency (seeking out relevant information, rational decision-making) in transition success. He also notes that women are consistently under-represented in apprenticeship training, despite increasing encouragement (financial support and bridging programs) for women to participate in trades. In fact, there has been no strong shift of women into vocational occupations relative to other labour areas.

Sweet's research suggests two conclusions:

1. Women are more sensitive to information that links their personal investment of time and money into apprenticeship training and potential labour market outcomes.
2. Due to workplace inequity, apprenticeship training confers no particular benefit to females.

Van Walraven, J (2005) *An Inventory of Government Incentives For Employer-Sponsored Worker Training in Canada and the United States*. Ottawa: Human Resources and Skills Development Canada.

This paper attempts to determine if the lower level of employer-sponsored training (including apprenticeship) in Canada relative to the United States is due to a weakness in government incentive programs. Overall, the study concludes that the difference in government support between the two jurisdictions is too small to explain the lesser amount of employer training conducted in Canada. Interestingly, the inventory finds that roughly 80 per cent of government incentives in Canada go towards apprenticeship training, despite the fact that apprenticeship accounts for a small proportion of the employer training undertaken in Canada and the United States.



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