Apprenticeship in Canada:
Issues and Problems

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This paper addresses five issues facing the apprenticeship system in Canada.

1. Average age of apprentices,
2. Non-completion rate and rational planning of apprentice intake,
3. Specialization and fragmentation of on-the-job training,
4. Relationship of Apprenticeship to training of technicians and technologists,
5. Emerging technologies and dated training standards.

1. Average Age of Apprentices in Canada

There are many who believe that the essence of apprenticeship lies in its role in the school-to-work transition for younger workers. That characterization is undoubtedly true for the way apprenticeship operates in Germany, and to a lesser degree, in Britain. However, the evidence in Canada - or more broadly North America - points to a radically different role for apprenticeship.

The most recent *National Apprenticed Trades Survey* confirms the evidence in the administrative data maintained by provincial authorities, namely, the median age at which an individual *enters* an apprenticeship is not 17 - as one would expect in the school-to-work transition model. Rather it is 27. The overwhelming majority of new entrants into an apprenticable trade have already had considerable work experience. *Apprenticeship in Canada is not chiefly about the school-to-work transition of young workers.* Rather, apprenticeship is a means by which individuals without post-secondary training, and often without an affinity for classroom-based learning, get back into the training system and thereby are enabled to make a significant investment in their skills and in their long-run employability.

To correctly understand apprenticeship and its role in the labour market, we have to recognize that the chief purpose of apprenticeship is to provide an avenue of *re-entry* into the training system for workers in their mid-to-late 20's. The purpose of apprenticeship in Canada is not, for the most part, to provide a means of transition

from school to work for young people in the 16-18 age group.

To appreciate why apprenticeship has taken on this Are-entry@ role, we must keep in mind that apprenticeship is a voluntary system that requires the active collaboration of employers. The comparatively older age of entry of apprentices reflects, in large degree, the preference of employers for individuals who have experience, maturity and focus. Employers, in general, have shown no propensity whatsoever to open up *paid* training positions for young workers.

Reforms, such as those planned by Ontario, to radically re-orient apprenticeship so that it is principally about the school-to-work transition will have serious, counter-productive results. First, employers will not willingly take on the training responsibilities for 16-18-year olds that these reforms both presume and require. Without employer co-operation and collaboration, the apprenticeship system will wither. By interfering so radically against the obvious, revealed preference of employers for older apprentices, proposals to force apprenticeship into the school-to-work mould will damage the credibility of the system and erode the employer co-operation which is essential. Second, by re-orienting apprenticeship to the school-to-work transition, the current wave of reform will significantly narrow, or even close off, what has been an important channel for re-entry into the training system by workers in the mid-to-late 20's.

The current reforms to apprenticeship will both fail to achieve their goal and will be socially destructive in so far as they reduce the opportunities for workers in their mid-to-late 20's to re-enter the training system.

2. Non-Completion Rate and Rational Planning of Apprentice Intake:

As noted earlier, the median age of entry into an apprenticeship is 27. In other words, *half of all persons who commence an apprenticeship are over the age of 27 when they start*. The average age of registered apprentices (i.e., persons who are in the process of doing an apprenticeship) is over 30. This has important implications for how we manage apprenticeship.

Workers who are in their late 20's or early 30's, are likely to have family responsibilities and financial obligations which make unemployment a significant burden. In the *National Apprenticed Trades Survey*, 35% of female apprentices and 40% of male apprentices had dependents whom they supported from their earnings. If an apprentice is unable to secure the employment necessary to complete his or her apprenticeship within a reasonable period of time, then he or she is likely to abandon that apprenticeship. Not surprisingly, unemployment is the major reason given for abandoning an apprenticeship.

Obviously, it is counter-productive if the system recruits more apprentices than it can reasonably expect to employ. The result will be significant spells of unemployment for many apprentices, unnecessary economic hardship and a higher drop-out from apprenticeships. From the perspective of the training system, scarce resources will have been wasted. From the perspective of the individual, an opportunity for re-entry into the training system will have proven to be an illusion. Time will have been wasted. An implicit promise will have been broken.

Clearly, it is in everyone=s interests to avoid a situation in which too many new apprentices are recruited relative

to available work opportunities for those apprentices. That requires a commitment to rational planning. There are five factors which need to be taken into account. These are:

1. the demand for skilled labour in a trade over the next five to ten years,

2. the impact of productivity changes on the demand for skilled labour in that trade,

3. the probable exit rate from the trade owing to retirement and voluntary exit;

4. the current surplus or shortage of skilled labour in that trade; and

5. the ability of individuals in one region or province to move to where there are employment opportunities.

If these factors are relied on to estimate the sustainable level of apprentice intake, then the risk of too many apprentices chasing too few employment opportunities will be reduced significantly. If these factors are not taken into account, the biases of the system inevitably lead to an over-recruitment of apprentices.

From the perspective of employers, an apprentice with some trades training is an attractive employee. In the language of labour economics, the experienced apprentice=s productivity is greater than his or her wage. Employers put apprentices on a crew to achieve a lower average labour cost than would be the case if the crew were composed entirely of journeypersons. A crew of journeypersons and apprentices is a more efficient crew than one composed of journeypersons and helpers. This blended rate and productivity advantage are competitively important. The inherent bias of employers is to over-recruit apprentices. This bias is constrained by restrictions on the employment of apprentices - usually expressed as ratios - which are founded in regulations under provincial apprenticeship legislation and sometimes in collective agreements. Current reforms of apprenticeship envision eliminating these ratios.

The regulatory ratios are the only bulwark in the apprenticeship system against over-recruitment. These ratios, however, have only a weak or co-incidental relationship to rational planning. The ratios are rigid. They do not reflect current or medium-term economic prospects. For many trades, in many parts of Canada, the operation of the ratio system is leading to too many apprentices chasing too few employment opportunities. Training resources that could be used to upgrade the skills of current journeypersons or to enrich the training of apprentices, instead are frittered away on apprentices who will not have the opportunity to complete their apprenticeship. For those apprentices, the offer of apprenticeship will amount to little more than a broken promise.

Either the industry has to fix this problem - and in a competitive situation one can have little confidence in the willingness of contractors - union or non-union - to limit their employment of apprentices, or the government has to fix the problem. The problem must be fixed. There is no sensible alternative to rational human resource planning. The longer we delay implementing such planning, the more we will undermine the integrity and credibility of the apprenticeship system. Moves to reduce the role of government by essentially privatizing apprenticeship - whether done under the guise of Aindustry ownership@ or by governments bent on deregulation risk making the management problem worse.

3. Specialization and Fragmentation of On-the-Job Training:

Apprenticeship is supposed to be broadly-based, as well as practical. It is widely believed that employability is maximized by broadly-based training in the fundamentals of a trade. Training is broadly-based when it stresses the generic aspects of skills and when the range of skills covers a variety of potential work situations involving the materials, procedures or tools that commonly define a trade. Broadly-based training is fundamental to the apprenticeship system and is one of the justifications for the length of time required to qualify in a trade.

The need for broadly-based training, however, runs counter to the logic of specialization, which is inherent in a competitive economy. Adam Smith=s *Wealth of Nations,* let us not forget*,* begins with a description of how productivity is enhanced by the division of labour. In most trades, the pattern of specialization means that firms undertake only some aspects of the work that is more broadly associated with a trade. In carpentry, for example, a contractor may do only framing, formwork or finishing work. In sheet metal contracting, a firm may do only heating and ventilation systems. Survey work done for national trade studies shows that roughly two-thirds of apprentices work for only one employer during their period of apprenticeship. *If specialization is inherent in the market place, we must expect that an apprenticeship which is confined to a single employer is likely to fail the test of skill breadth*. The import of this is that left to its own devices, the apprenticeship system will not provide the breadth of training which is the very rationale for legislatively recognized trades and national trades standards.

To deal with this problem will require far more active management of apprentice training than is currently typical in most trades and in most regions. Admittedly, there are exceptions. Some trades, in some regions, do not confront the same pressure to specialization. Some trades, in some regions, rotate apprentices across employers to ensure greater breadth of training. In other cases, trades rely on auxiliary training to achieve the breadth of exposure that is no longer provided through on-the-job training. *In the main, however, most trades, in most regions have not come to grips with the problem of specialization and have not taken any steps to ensure that apprentices receive the breadth of training that is at the heart of the rationale for the trades and apprenticeship system*.

4. Relationship to College-based Training of Technicians and Technologists:

In most provinces, apprenticeship training and training for technician or technologist certification proceed along separate channels with little, if any, opportunity for apprentices or technology students to have their training recognized in the other channel. This is both unreasonable and unfair. It is unreasonable because, in many trades, there is no longer a sharp divide between the work that is done by a skilled tradesperson and the work that is done by a technician or a technologist. This is especially true in the manufacturing sector, but also in the repair and maintenance sector.

What is needed is an unimpeded path between trade qualifications and technician or technologist qualifications. An unimpeded path would mean that a qualified tradesperson could continue his or her training to obtain formal qualification as a technologist and would gain recognition for trades school studies and also, as appropriate, for on-the-job learning. Conversely, a qualified technician or technologist would not be

required to re-do trades school courses that largely correspond to curriculum already studied. On-the-job experience would also be taken into account in determining the appropriate duration of the apprenticeship period.

It is a serious error on the part of both the skilled trades and technicians and technologists to believe that work can be protected by maintaining barriers to qualification. In the long run, work can only be protected by the superior productivity of skilled workers. There is far more institutional commitment and investment in technician and technologist training than there is in apprenticeship training. Barriers which restrict mobility are far more likely to result in a build-up of pressure for reform. That reform will dilute apprentice training along with sweeping away barriers to mobility.

In Germany, which has the most viable apprenticeship system in the OECD, there is an unimpeded path from trade qualification to technologist qualification and thence to qualification as an engineer. In Canada, by comparison, there are barriers at every step along the way.

While there is only limited survey evidence on the long-term, career paths of persons who hold trade certifications, the evidence indicates that a significant proportion of skilled tradespersons move out of their trade and into other fields. This is a credit to the solid foundation of generic skills that were obtained by skilled tradespersons through their apprenticeship. Such mobility should be welcomed and supported. The presumption of mobility should be built into the system of trades training. An unimpeded path between trade qualification and technician or technologist qualification would significantly improve the image of the skilled trades and support the long-term, career mobility of qualified journeypersons.

5. Emerging Technologies and Dated Training Standards:

Apprenticeship training is based on an analysis of current skill requirements. This analysis is oriented toward representative or typical skill requirements. Emerging skills do not have the breadth of current usage to meet the test of a Acurrent skill requirement.@ The result is training standards which address typical skill needs, but are largely indifferent to emerging skill requirements. By the time an emerging skill requirement becomes sufficiently widespread to be a commonly required skill, five to ten years of new entrants into apprenticeship will have passed through the system without training in those skills.

The reliance on a national occupational analysis that is geared to typical skill requirements to determine training curricula has resulted in too little weight - sometimes no weight - being assigned to emerging skill areas. These include: accessing and manipulating CAD-based drawings, basic computer literacy, using computer-based or computer-linked measuring instruments, environmental protection regulation and exposure to new technologies in the trades.

The link between trades school curriculum and the current occupational analysis is far too tight. Ironically, if the colleges and CGEP=s were determining the curriculum themselves, there would probably be more emphasis on emerging skill requirements. It is the commitment to a common training standard, combined with the conservatism of the occupational analysis system that is the source of the problem. Significantly, this problem is not nearly as acute in the training of technicians and technologists. Exposure to emerging skill

requirements is constrained only by limited resources and the availability of equipment. If the trades are to avoid losing ground, apprenticeship training must give greater scope for training in emerging skill requirements. It may follow from this that the trades school component of some trades will need to be increased.

6. Summary:

Apprenticeship and the skilled trades system play a significant and irreplaceable role in our labour market and in our training system. We would be much worse off if the apprenticeship system were weakened further, as has evidently happened in many parts of the United States. To defend the apprenticeship system, however, is not to be blind to the problems which the system faces.

First, we must recognize that the apprenticeship system is chiefly about re-entry into the training system, not about the school-to-work transition. Second, we must also recognize that the failure to adopt rational planning criteria around the number of apprentices to be recruited will undermine the apprenticeship system more surely than any neo-conservative government. Third, we must acknowledge that trends to specialization fly in the face of the broadly-based training that is the rationale of apprenticeship, the regulated trades system and national standards. Fourth, we must construct an unimpeded path between trades qualification and qualification as a technician or technologist. And fifth, we must ensure that the in-school component of apprenticeship provides appropriate exposure to computer skills and emerging technologies. If we take these steps, we will have a trades and apprenticeship system that serves the interests of individuals, employers and society. If we fail to take these steps, the system will weaken until it cannot be repaired.

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