

Connecting Supply and Demand in Canada's Youth Labour Market

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Pathways to the Labour Market Series – No|8

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Contents

Acknowledgements	ii
Foreword	iii
Executive Summary	iv
1. Introduction	1
2. Methodology	5
3. The Use and Limitations of Occupational Projections	7
4. Skill Utilization and Skill Development in the Workplace	16
5. The Role of Employers in the School-to-Work Transition	30
6. Policy Implications and Research Gaps	39
7. Conclusion	42
Key Websites	43
References	44
Appendix A. A Note on Current Labour Market Projections (Using COPS)	49
Appendix B. Stakeholder Interview Questions	51
Our Support	53

Figures and Tables

Figure 1. Unemployment Rates in Canada, 1996 to 2006	3
Table 1. How Frequently Do You Feel that You Fully Contribute Your Skills, Knowledge and Abilities?	20
Table 2. How Frequently Do You Take Initiative in Your Job?	21
Table 3. How Often Do You Learn New Ways to Do Your Job Better?	21
Table 4. Perceived Minimum Education Required for Job, by Age	22
Table 5. Actual Educational Attainment versus Perceived Minimum Education Required for the Job	24
Table 6. Percentage of Workers Who Feel Over-Qualified for Their Job, by Age	25
Table 7. Changes in Skill Requirements, by Age	26
Table 8. Availability and Satisfaction with Training, by Age	28
Table 9. Job and Pay Satisfaction, by Age	29

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The authors are responsible for all interpretations of the data and information provided.

Foreword

Young Canadians are looking for more choice when it comes to learning options – before and during their careers. That was a strong message coming out of CPRN’s Youth Dialogue in November 2005. Young people told us that post-secondary education (PSE) should be available to everyone – whether it is university, college or trades programs. And they told us there should be a variety of well-supported learning opportunities.

Our two-year *Pathways for Youth to the Labour Market* project, which examines the ways young people navigate from high school through to the labour market, is nearing completion. The *Pathways* project set out to develop policy options that would improve young people’s ability to identify, select and navigate pathways that lead to rewarding and productive lives.

This report by Richard Brisbois, Larry Orton, and Ron Saunders – all from CPRN – is the eighth in our *Pathways* project series. The paper focuses on “demand-side” issues in the youth labour market, how employer demand is conveyed to students and those who support them and how well the skills that young people gain are utilized on the job. The findings raise concerns about whether information about current and projected labour market conditions is adequately disseminated and about whether the skills and knowledge gained by young Canadians are fully used in the jobs they find. There appears to be a mismatch between what young Canadians are being trained for and the jobs that are offered.

If we want more young Canadians to acquire high-level skills, and also use them in the workplace, we need to act not just on the supply side of the labour market by fostering high school completion and participation in PSE but also the demand side by fostering an innovative, high value-added economy, to increase the share of jobs that is well-paid.

The authors suggest a number of directions for improving the connections between the demand and supply sides of the youth labour market, including greater support for vocational options in high school; developing better bridges between educational paths; and strengthening partnerships between schools and employers in the design and delivery of co-op programs and career information. Most importantly, they argue that with people increasingly changing jobs and having to learn new skills over the course of their careers, our education and training system should be organized to offer and to support lifelong learning and to impart career planning skills.

I would like to thank the authors for their contribution in identifying policies and practices that can help young people make an informed choice about pathways leading to a career. I would also like to thank the RBC Foundation, Alberta Employment and Immigration and an anonymous donor for their financial support for this research.

Sharon Manson Singer, Ph.D.
April 2008

Executive Summary

Canadians are concerned about the paths taken from school to the labour market. Canadian Policy Research Networks (CPRN) has had clear feedback from young people, in particular, that they are concerned about the relative values placed on those paths and about the supports in place for them to pursue their chosen path. In our consultations with young Canadians, CPRN has learned that young people want more and better information on their career and educational options.

Against this background, CPRN began a project that attempts to shed more light on the paths young people take through school to the labour market and on the institutional and policy arrangements and values that support or hinder successful pathways. The *Pathways* project set out to develop policy options that would improve young people's ability to identify, select and navigate pathways that lead to rewarding and productive lives. This is the eighth study that has been published in the series; it will be followed by a synthesis paper that will identify the key findings of the project and make policy recommendations.

The papers published to date have dealt largely with the "supply" side of the labour market. As such, they have examined issues related to providing young people with skills and knowledge for their future careers. This paper focuses on "demand"-side issues in the youth labour market, how employer demand is conveyed to students and those who support them, and how well the skills that young people gain are utilized on the job.

Canada has one of the most highly educated workforces in the world. That workforce should be ready to contribute to a "knowledge-based economy" that depends on workers' talents. However, are we certain that young people are able to fully contribute their skills and abilities?

This report is based on a literature review, analyses of survey data and key informant interviews. The survey data used comes primarily from the *Workplace and Employee Survey* (WES) and *Rethinking Work* (RW) report. The WES has been undertaken by Statistics Canada since 1999 to explore issues relating to employers and their employees. The WES is a particularly rich data source because the survey links employers and employees. For our purposes, this means information from both the supply and demand sides of the labour market is available. RW was a collaborative effort between EKOS Research Associates Inc. and The Graham Lowe Group Ltd. to document emerging workplace and workforce trends.

On November 30, 2007, a draft of this paper was presented to a national roundtable with participants from governments, the education sector, employers, labour organizations, and the research community. This report owes a good deal to the feedback provided by the participants in the roundtable.

The Use and Limitations of Occupational Projections

Canada has an outstanding Labour Market Information system of which the Canadian Occupational Projection System (COPS) is an important component. Canada is one of very few countries that have a national system for making occupational projections. COPS has received favorable reviews for the quality of its projections.

What is not so clear is whether and how the projections are being used. Descriptions of how the system is used are available, but there are no hard data that makes it possible to assess its use. At the very least, we encourage the use of the one mechanism that appears to be in place to collect data.

Helping People Find Paths to Use Their Skills Fully

Canada has a relatively high percentage of well-educated young adults who see themselves as over-qualified for their jobs. It does not follow that fewer young Canadians should pursue post-secondary education. Instead, the research suggests that other actions need to be taken. Vocational options need greater support at all levels of the education system. More bridges need to be developed between educational options so that young people are able to move between vocational and academic programs. We need to move away from the idea that a person has to be all “schooled up” in youth and make it easier for people to enter and leave the educational system at different stages of their lives. We need to continue to develop ways to assess and accept the skills acquired outside the formal educational system.

We also need to consider whether any over-qualification in Canada’s labour market is related to the large low-wage sector of our economy. That sector has persisted despite economic growth and a more educated workforce. More action may be needed to foster an innovative, high-value-added economy, so that as Canadians continue to increase their level of educational attainment, they are able to fully utilize their skills and knowledge.

Connecting Schools and Employers

School-employer partnerships can play an important role in helping young people make informed choices in making the transition from school to work. These partnerships could be strengthened through:

- more resources for school-work programs;
- greater involvement of employers in their design and delivery;
- up-to-date training for teachers; and
- greater communication about these programs to students, parents, teachers and business.

Further Research

This study is just a beginning, and just one contribution to an important issue facing Canada. Further study is needed on the gap between employees' perception of their qualifications and the educational requirements of their job. There could be many reasons for the reported gap: frustrations with their job; lack of awareness of job requirements; requirements that are higher than needed. Research in these areas could involve an examination of the distribution of earnings by age group and level of educational attainment.

Connecting Supply and Demand in Canada's Youth Labour Market

1. Introduction

In November 2005, Canadian Policy Research Networks (CPRN) brought together 144 randomly selected young Canadians aged 18 to 25 years for a deliberative Dialogue and a Summit with 40 decision-makers from government, business, labour and the not-for-profit sectors. Young participants were invited to talk together about the kind of Canada they want, what choices and trade-offs they are prepared to make as citizens, and what they and others need to do to make their vision happen. Dialogue participants talked about four issues: learning, work, health and the environment.

In their discussion of learning issues, young Canadians stressed the importance of valuing different learning paths to work, in addition to college and university and to find some balance to the reliance on academic performance (de Broucker, 2006). They also felt that they may not have the appropriate information about all the options that are available to them either within high school or for post-high school studies. They called for more – and better presented – information on careers and educational options: *“Education on career choices is important: should we not spread appropriate courses over two or three years rather than concentrate a career planning course in one year? This would allow young people to broaden their perspective on future job opportunities”* (de Broucker, 2006: 5). In particular, they wanted to see better information provided for vocational, trades, and entrepreneurial paths and to have these pathways presented as real options to young people. Dialogue participants linked the provision of such options to the greater likelihood that more young people would complete their education and get good jobs without necessarily having to go to university.

In spring 2006, CPRN launched the project *Pathways for Youth to the Labour Market*. Its purposes are:

- to better understand the paths that young people take, from high school through to regular participation in the labour market;
- to identify institutional and policy structures that appear to support or hinder young people's ability to find pathways that lead to sustained employment with decent pay, good working conditions and career potential;
- to examine attitudes and underlying values about the different pathways that are or could be available, how they are shaped and how they influence choices; and
- to develop policy options to improve the ability of young people to identify, select and navigate pathways that lead to “success.”

The project was motivated in part by the Youth Dialogue and in part by the findings of de Broucker's 2005 studies for CPRN and the Organisation for Economic Cooperation and Development (OECD) on the early labour market experience of young people with different levels of educational attainment. His findings show that completing high school improves young Canadians' chances of finding employment, though, unlike the case in many other OECD countries, a high school diploma with no further credentials does little to improve the chances of getting a *skilled job* in Canada. De Broucker also finds that, while post-secondary education (PSE) provides, on average, clear benefits in terms of employment rates and earnings, in Canada and the United States one-third of employed 25 to 29-year-olds with a PSE diploma or degree have a low-skill job – the highest ratio among OECD countries.

Seven studies in CPRN's *Pathways* series have been completed and published:

1. *Career Development Services for Canadian Youth: Access, Adequacy and Accountability*, by Donnalee Bell and Lynn Bezanson, July 2006.
2. *Pathways of Alberta Youth through the Post-secondary System into the Labour Market, 1996-2003*, by Harvey Krahn and Julie Hudson, November 2006.
3. *Pathways for Youth to the Labour Market: An Overview of High School Initiatives*, by Alison Taylor, April 2007.
4. *Trading Up – High School and Beyond: Five Illustrative Canadian Case Studies*, by Mame McCrea Silva and Susan M. Phillips, May 2007.
5. *Education-to-Labour Market Pathways of Canadian Youth: Findings from the Youth in Transition Survey*, by Darcy Hango and Patrice de Broucker, November 2007.
6. *From School to the Labour Market in Québec: Analysis of Student Trajectories in Terms of Previous Learning Path and Early Labour Market Experience*, coordination by Jean-Claude Bousquet, February 2008.
7. *Implementing the School-to-Work Transition in Quebec*, by Pierre Doray, Louise Ménard, and Anissa Adouane, March 2008.

In addition, in 1996 CPRN published *Youth and Work in Troubled Times: A Report on Canada in the 1990s*, by Richard Marquardt, which can be seen as a precursor to the *Pathways* project.

Our work so far in the *Pathways* series has focused largely on the supply side of the youth labour market: what learning paths are made available to young people; how well they are supported; how many follow the different paths; and what factors affect these choices. We have also looked at the early labour market outcomes associated with different learning pathways, which are related to both supply and demand factors. Demand-side issues have also been implicit in some of the work so far that looks at school and employer partnerships.

In this study, we focus on the issues on the demand side of the youth labour market, and how employer demand for skills and knowledge is conveyed to high school students, educators, and career planning counselors. In particular, we examine such questions as:

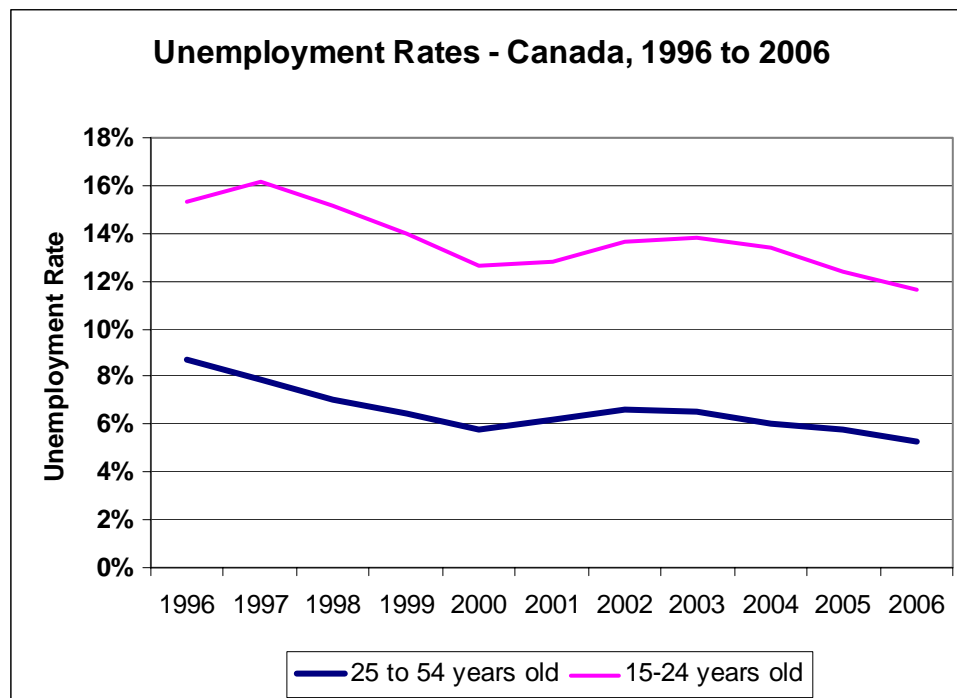
- What information is available about demand for labour in various occupations?
- How is such information used?

- How well are young people's skills being utilized in their jobs?
- How can employers facilitate the school to work transition?
- What government policies and employer practices could help more young people in Canada make an informed choice about learning pathways leading to a career and improve the level of utilization of skills in the labour market?

The problem in today's youth labour market in Canada is not so much the availability of jobs, but the availability of learning paths and labour market opportunities that allow our youth to fully realize their potential to contribute to the economy and to their communities.

Unemployment rates, overall and for youth, have come down markedly over the past decade (see Figure 1.) With the aging of the baby boom cohorts, labour force growth will slow and unemployment rates may decline even further. Skill shortages in some sectors and in some regions have already started to emerge. However, while jobs are expected to be plentiful, there are still some questions, explored in section 4 of this paper, about the capacity of the economy to generate enough high-skilled jobs to match the growing educational attainment of the labour force. Moreover, the question of finding a good match for one's interests, training and abilities will continue.

Figure 1. Unemployment Rates in Canada, 1996 to 2006



Source: 1996 to 2003 data – Statistics Canada Labour Force Historical Review, 2003
2004 to 2006 data – OECD *Employment Outlook*, 2007.

The high school dropout rate has also been declining. In the first quarter of 2007, the proportion of young adults who were not in school and had not successfully completed high school was 8.9 percent.¹ Although the high school dropout rate is lower than it was in the past, concerns remain about finding ways to motivate more young people to obtain the secondary school diploma. Also, the 8.9 percent average masks differences across gender and across communities: the dropout rate is higher for young men (10.3 percent) than young women (7.4 percent). It is very high in some schools.

The importance of looking at both supply and demand-side factors affecting the school-to-work transition (and other transitions in the labour market) is underscored in the 1994 report, *Putting the Pieces Together: Toward a Coherent Transition System for Canada's Labour Force*, by the Task Force on Transition into Employment of the Canadian Labour Force Development Board (CLFDB).

The CLFDB Task Force defines employability as “the relative capacity of an individual to achieve meaningful employment, given the interaction between personal characteristics and the labour market.” In explaining the definition they note that, “Building a successful model for transition into employment implies bringing together, in a coherent framework, all of the elements affecting employability: education, training, counselling, prior learning and skills assessment, labour market information, hiring and separation practices, work organization, equity, human resources planning, and employer-employee relations.” In other words, the ability of an individual to find and retain a good job depends not only on their personal characteristics, but also on conditions in the labour market. This means, for people to realize their potential to contribute to the economy, we have to consider not only factors that affect the supply side of the labour market (such as access to education and training opportunities), but also the demand side (what employers have to offer) and the interplay between supply and demand that is mediated in part by the exchange of labour market information.

Section 2 of this paper briefly outlines the methodology of the study. Section 3 examines occupational projections in Canada: how are they developed; how reliable are they; and how well are they used. Section 4 reviews the literature on skill utilization in the Canadian labour market. This is followed by an analysis of the current and potential role of employers in the school-to-work transition. We conclude by identifying policy implications.

¹ Data from the *Labour Force Survey*.

2. Methodology

This research paper is based on a review of relevant literature, survey data analyses and information gathered from key informant interviews.

Literature Review

Our review of the literature focused on two areas. The first was theories concerning skill utilization, or the extent to which those with given skills and knowledge are using them in their jobs. The second was recent commentary and research on the value and use of occupational projections, in particular the Canadian Occupational Projection System (COPS).

Data Sources

Data on training and skills development used in this report are from two main sources: The *Workplace and Employee Survey* and *Rethinking Work*. These are described in detail below.

Workplace and Employee Survey

The *Workplace and Employee Survey* (WES), first fielded by Statistics Canada in summer and fall 1999, is designed to explore a broad range of issues relating to employers and their employees. The survey aims to shed light on the relationships among competitiveness, innovation, technology use, and human resource management on the employer side and technology use, training, job stability, and earnings on the employee side. The survey is unique in that employers and employees are linked at the micro-data level; employees are selected from within sampled workplaces. Thus, information from both the supply and demand sides of the labour market is available to enrich studies on either side of the market.²

The survey frame of the workplace component of the WES is created from the information available on the Statistics Canada Business Register. The 2003 WES contains information collected from just over 6,500 business establishments in Canada and 20,834 paid employees who worked in those establishments. The 2004 WES contains information from over 6,100 business establishments and 16,804 paid employees. The WES does not include establishments in the Yukon, Northwest Territories or Nunavut, nor those in public administration (i.e. government) and selected primary industries (McMullen and Schellenberg, 2002). The 2004 WES is a follow-up to the 2003 WES (surveying the same business and employees) as part of the longitudinal design of the survey, although the survey questions may change from one year to another. The data used in this report are from the employee side of the 2003 and 2004 WES. The tabulations of the WES data were provided to CPRN by Statistics Canada.

² For more information, see www.statcan.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=2615&lang=en&db=IMDB&dbg=f&adm=8dis=2.

Rethinking Work

Rethinking Work (RW) was a collaborative effort between EKOS Research Associates Inc. and The Graham Lowe Group Ltd. to document emerging workplace and workforce trends and probe their implications for human resource practices and organizational performance. Data used in this report are from the Canadian Worker Survey, conducted in 2004.

The Rethinking Work –Canadian Worker Survey (2004) comprises a random sample of 2,002 individuals who are employed, self-employed, or unemployed (but have held a job at some point in the past 12 months), and is considered to be representative of the Canadian workforce. A sample of this size has a margin of error of up to +/- 2.2 percent at a .05 confidence level (i.e. 19 times out of 20). Telephone interviews were conducted during September and October 2004, and the response rate was 27 percent.

Key Informant Interviews

Interviews were also conducted with key stakeholders across Canada about the role of employers in the school-to-work transition, finding out what works and what does not. This included stakeholders from business, research and school boards. The list of those invited to participate in the interviews was developed through consultation with organizations known to be actively engaged in promoting school-employer partnerships, including: the Society for Advancement of Excellence in Education (British Columbia); the British Columbia Ministry of Education (Student Transitions); the Learning Partnership (active Canada-wide, but consulted particularly about Ontario organizations); and the Nova Scotia Community College. Resource constraints limited the number of interviews to 10, and we cannot be sure that those interviewed are representative of their sectors, so the findings of the interviews need to be treated with some caution.

3. The Use and Limitations of Occupational Projections

Occupational projections are an important, but just one, part of a larger Labour Market Information (LMI) system that includes, for example, information on immigration, on the employment experience of recent graduates (the National Graduate Survey), employment statistics (the Labour Force Survey), the experience of those who are working (gained from the Workplace and Employee Survey), and economic well-being (from the Survey of Labour and Income Dynamics). Occupational projections are about expectations regarding future supply and demand in the labour market.³

The demand for labour has to do with the number and types of jobs available. Thus, consideration of the demand side of the labour market starts with concerns about just what the labour market might need. Does the labour market need more professionals or tradesmen? Does it need more doctors and lawyers or does it need more welders and bakers? Or does it need more skilled technicians to deal with the equipment needed to keep our hospitals, homes, offices, and industries running smoothly?

These sorts of questions arise not just for current labour market conditions, but also for expectations about the future. The results are generally referred to as “occupational projections,” although the term “employment projections” is also used. Throughout this paper we use “occupational projections” or just “projections.”

Occupational projections can be complex and expensive, given the need to gather data for a variety of industries and occupations for a region, province, or country. Yet, as is illustrated below, they can be quite useful to a large number of people and organizations on both the supply and demand sides of the labour market. As such, they have the character of a “public good” (Neugart and Schömann, 2002: 11; and Smith, 2002: 67-69⁴). Thus, governments sometimes prepare projections and make them accessible to students and their parents, the educational community, and employers.

Use of Projections

A crucial issue for the usefulness and legitimacy of occupational projections is who benefits from them. Projections are useful for both the supply and the demand sides of the labour market. The demand side (companies) gains from early warning of future recruitment problems or excess supply of certain qualifications. Companies may respond by adjusting human resource development policies (e.g. providing tailor-made training courses) or even by adjusting expansion or investment plans. The supply side (the education and training system and its component parts) benefits from the projections in planning program offerings. Retraining courses sponsored by the government can benefit directly from forecasting by redefining

³ For a discussion of LMI systems and a comparison of Canada with other countries, see Sharpe and Qiao, 2006.

⁴ Smith (2002: 67-69) discusses labour market information generally as a public good and looks at the particular problems of forecasts.

priorities (National Observatory, 2007).⁵ More generally, governments benefit by being able to develop plans for labour market programs and policies that are informed by an understanding of where future labour market conditions seem to be headed.

Students planning their course of learning, their parents and career planning counsellors benefit from projections in that they provide information about the labour market outcomes expected for different learning pathways. Such groups also benefit from other forms of labour market information, as noted above.

Projections came into common use in the mid-1900s. Since their inception, economists and public policy professionals have debated their reliability. The nature of this debate is outlined in a recent review by the Canadian Council on Learning (CCL) in *Is it Possible to Accurately Forecast Labour Market Needs* (CCL, 2007).

The need for some basis for making decisions is so pervasive that projections will undoubtedly continue in common use, even while the debate over reliability continues. Employers need to make decisions about investments, including whether to hire new staff, and what kind of staff to hire and train. Educational institutions need to know whether to expand and what programs to offer. Students and their families use the prospect of secure employment as the basis for deciding on a program of study.

Canada is one of the few countries that regularly publish projections of occupational labour market conditions, the others being the United States, the United Kingdom, Australia, Germany, and the Netherlands (Papps, 2001: 2). Papps describes the activities of organizations that generate the projections in these countries, but does not consider accuracy beyond noting a couple of ways in which it has been addressed. The CCL published a thorough review of the research literature to determine whether it is possible to accurately predict labour market needs. In its work, the CCL identified 3,413 papers, and, of these assessed, the quality of 36 that dealt directly with issues surrounding accurate prediction of labour market needs or that empirically test the ability of a model to make accurate predictions. The paper seems to conclude that while “studies are able to confirm the forecasting accuracy of their proposed models ... we cannot confidently infer that one particular kind of ... model ... can accurately forecast labour market needs in all situations” (CCL, 2007: 78). The problem is that models focus on different aspects of the labour market, and might focus on either an overall employment rate or on a rate for specific industries.

⁵ Note that projections are not quite the same as forecasts because if an undesirable situation is projected, such as a severe shortage in a particular occupation, one would expect changes in behaviour on both the supply and demand side of the labour market (more people entering training for that occupation; firms looking at ways to organize work so as to reduce the need for the occupation in short supply) so that several years later there is no shortage. This means that we should not necessarily judge the usefulness of projections by whether or not projected shortages actually materialize.

The Methodology of Making Occupational Projections

The approaches to occupational projections are described in the work already identified by CCL and Papps.⁶ Papps discusses the views of employment projections held by two schools of economic thought (Papps, 2001: 6). Neo-classical economists believe that “labour markets are flexible, that skill substitution is relatively easy and that wage differentials adjust quickly to eliminate any labour imbalances that might affect particular occupations.” Given those beliefs, neo-classical economists see little need for projections by industry or occupation. Structural economists, on the other hand, believe that, because the labour market is relatively inflexible, “forecasts of imbalances of supply and demand in some labour markets are pivotal to the development of programmes to ensure that labour is available in the required quantity and quality in each occupation in the future.”

Papps also details the approaches taken by the few countries that regularly make projections and characterizes the two most popular approaches as the “manpower requirements” and “rate of return” methods (Papps, 2001: 23 et seq.). The CCL summarizes projection methods under the headings “Workforce Projections” and “Labour Market Analysis.” We also use those categories.

Workforce Projections Approach

Workforce projections can use either “econometric models” or “workforce planning.” Both approaches provide long-term forecasts for entire countries or provinces, and both begin with macroeconomic forecasts of GDP that can be supplemented by labour market data to reflect regional and short-term trends. Of the two, econometric models are thought to provide higher-quality forecasts, provided they use quality data.

Econometric models start with theories about causal relationships in the economy and use mathematical representations of those theoretical relationships. Workforce planning models make “plausible assumptions” to relate the output of education and training institutions to a country’s expected economic growth. The employment needed for growth is forecast and occupational distributions are estimated. For each occupation, labour requirements are projected based on the imbalance between demand (expected growth and replacement needs) and supply (expected new labour in the form of graduates, immigrants and labour force re-entrants). The estimate of labour requirements and the known skills and education needed for each occupation can then be used to determine training requirements. The estimated training requirements are then compared to the expected output of training institutions, enabling planners to identify potential shortages or surpluses. COPS can be seen as a workforce planning model, although COPS recognizes that occupational projections cannot be as accurate as required to quickly adjust the supply of labour from the education and training systems to labour demand. Such adjustments were hoped for in earlier decades, but since then approaches have shifted towards producing labour market information and relying on market mechanisms.

⁶ This section draws on the work by the Canadian Council on Learning (CCL, 2007: 8-12) and Papps (2001). Papps looks in detail at how each country undertakes projections (3-22), and compares methodologies (22-29).

Various factors influence the reliability of workforce projections, whether they use the planning or the econometric approach. Assumptions can be proved wrong, whether about economic growth, labour needs, or the relationship of the amount of goods produced to either wages or the number of workers. Both approaches are limited by the data available. The data tend to be for large areas; therefore, the projections are likely to be national in scope, partly because the amount of data needed makes projections expensive to develop and maintain, so that economies of scale are needed.

Each approach has some unique limitations. Workforce planning in particular is limited by the difficulties in translating labour requirements into educational profiles. The difficulties here are that there are many routes to almost all occupations⁷ and that education requirements for occupations can change dramatically. The CCL notes that these sorts of limitations mean that forecasts using the workforce planning approach need to use shorter time spans and to be updated regularly.

Econometric models have particular data limitations. One is that there are not enough data to model the infinite number of relationships that can be imagined or modeled. Another is that the number of theoretical models is so great that not all can be pursued. Another is that some theoretical models need to be simplified so that they can be described mathematically. Although econometric models are subject to error, confidence intervals cannot be provided for the outcomes predicted.

Labour Market Analysis Approach

Labour market analysis refers to measures of education and training requirements that are used to translate occupational classifications into skills requirements. Labour market analysis can take four different forms: Public Employment Services/Job Advertisements; Key Informant Interviews; Employer Surveys/Household Surveys; and Enrolment Data and Tracer Studies. All four can be used as a supplement to increase the accuracy of projection techniques, as well as their applicability to regional and sectoral projections.

The labour market sends “signals” by advertising job openings. Data collected on openings, placements and unemployment rates provide data that can be analyzed for insights into shortages or surpluses. Shortages can be reflected in high levels of unemployment and salary increases. Job advertisements also contain concrete information about the skills and qualifications that employers are looking for in certain positions, which can contribute to occupational profiles.

Interviews with individuals in a position to know a great deal can offer information about the scarcity or abundance of certain skills, anticipated technological advances, and hiring practices.

⁷ In Canada, labour requirements are translated into educational profiles by using the Standard Occupational Classification (SOC) coding system. The 10 broad occupational categories of SOC are converted into National Occupational Classifications (NOCs) that HRSDC uses for its forecasts. NOCs are subdivided by skill types and levels.

Because employers make hiring decisions, they can provide information on skills needs, the education needed, and the types of businesses that are expanding and contracting. Employer surveys can be supplemented by household surveys for information on those who are not in the organized labour market. The in-depth information that can be gathered by surveys and interviews with employers and members of households can be especially useful at the regional and community levels.

Enrolment data (or applicant-to-admission ratios when the number of applicants is known) can indicate areas of high or low demand. Enrolment data can also predict the expected number of trained workers. Follow-up studies of graduates can determine what occupations are followed by graduates and which sectors are hiring graduates with certain skill sets, the length of time it takes to find a job in a specific field, and the wages paid in different occupations. Such studies are used to “map” the routes into an occupation.

Even though these labour market analysis techniques are easy to understand, they have certain limitations. Translating labour requirements into educational profiles is difficult. The analysis of public advertisements is handicapped by the difficulties of gathering data, especially in getting complete data in analyzable form, and is further complicated by the growing use of the Internet as a place to post job openings. Key informant interviews and surveys of employers or households need to deal with data analysis problems, especially with the qualitative data that often results, and with the possibility of biased data. While not a bias per se, it is also the case that individual employers are unlikely to make consistent projections about the level of growth and the structure of output over the forecasting period. As well, the data obtained from surveys of employers or households in one region may not be applicable to other regions. In the case of surveys of employers and households, and follow-up studies, response rates may be low. In both cases, unless the surveys and studies are structured specifically, the findings can be biased by the inclusion of other objectives.

Vocational Guidance and Career Management Models

We have seen that occupational projections and other labour market information can be useful to students, education and training providers, employers and policy-makers, and that the projections used in Canada are well regarded. However, we have also seen that there are limitations in what we can expect from occupational projections, particularly in terms of their reliability when looking at narrowly specified occupations, or in looking at local, as opposed to national, trends. In light of the rapid pace of change in technology and patterns of industrial activity and the uncertainties about future labour market supply, this should not be surprising. However, recognizing these limitations may affect how we approach the supports offered to young people as they make choices that affect career options.

Occupational projections form one input into what has been referred to as the “vocational guidance model” of helping people make choices about learning and career pathways. This model involves exploring interests, aptitudes, values, etc. (often with tests and professional help); exploring the world of work using comprehensive labour market information; finding an occupational goal that allows a best fit of personal traits and job factors; and developing a plan to obtain the prerequisite education and training for that occupation. Some argue that this “vocational

guidance model” needs to be replaced with a “career management model” (Jarvis, 2003) that emphasizes helping people develop the skills needed to cope with constant change in rapidly changing labour markets and maintain balance between life and work roles. Rather than fixed steps, the model promotes principles: know yourself; focus on a career “journey” rather than an occupational goal; accept that change is a constant; and that learning – including that needed for work – is lifelong.

The proponents of the career management model argue that the “catch phrase” of the old paradigm, ‘What do you want to be when ...?’ loses relevance in labour markets where new workforce entrants can anticipate having 12 to 25 jobs in up to 5 industry sectors (Jarvis, 2003). They argue that it is now unrealistic to expect to have an occupation for life and that many of those who are products of the old paradigm – including educators, parents, business people and planners – do not fully comprehend the new work world and may even create unnecessary pressures. For example, it is not helpful for parents to believe their children are doing something wrong or failing when they cannot secure a “permanent” job.

The proponents of the career management model provide a compelling argument that the concept of “occupation” is outdated and that the career management model is more likely to lead to fulfilling work in the knowledge age economy. Regrettably, most educators, corporate executives, legislators and policy makers, community leaders, parents and others are still encumbered by the old vocational guidance mindset.

Canadian Occupational Projection System (COPS) and Job Futures

Description

In Canada, employment forecasting is undertaken by the Strategic Policy Research Directorate of Human Resources and Social Development Canada (HRSDC), which uses the Canadian Occupational Projection System (COPS) to produce occupational projections.

COPS began as a demand-side or manpower requirements system, but since the 1980s has used both supply and demand to provide a picture of the labour market. “Supply” includes the number of people available for employment, including school leavers, immigrants and re-entrants to the labour force. “Demand” includes the number of job openings expected either because of expansion or replacement. Expansion concerns growth in the economy. Replacement concerns job turnover from either permanent or temporary departures from the labour market (retirements and parental leave, respectively, for example).

The occupational projections that COPS produces can be found in *Looking-Ahead: A 10-Year Outlook for the Canadian Labour Market (2006-2015)*. *Looking-Ahead* has been published twice, most recently in May 2007, and will be published every two years. Although *Looking-Ahead* is directed at the policy community, the projections are used in the Job Futures website (www.jobfutures.ca) operated by Service Canada, which provides a broader range of labour market information (such as an outline of different programs of study) geared to students and employers. That interactive site makes the projections available across the country and worldwide.

COPS attempts to answer questions about both the supply and demand sides of the labour market (Human Resources and Social Development Canada, 2006: 7), as well as questions of market balance: supply relative to demand. These are some specific questions it addresses:

- “What kind of education is required to fill the new positions?”
- How many jobs are expected to be created over the next decade?
- In which industries and occupations will the new jobs emerge?
- “Will the supply be sufficient to meet this new demand?”
- What occupations will face significant labour market pressures?

Job Futures uses COPS projections and data from the Labour Force Survey and the National Graduate Survey. Some of this is aimed at those attempting to make a career decision, and thus more concerned with the “supply” side of the labour market.⁸ Job Futures also includes information that is more concerned with the “demand” side of the labour market. This would include the provincial distribution and main industries of employment; annual growth rates; current and future employment trends including number of job openings, job prospects, and earnings; and full- and part-time employment rates.

Quality

Sharpe and Qiao (2006: 4, 16) have observed that “Canada has one of the best LMI systems in the world,”⁹ although they do not look specifically at projections.

The quality of COPS is important because poor projections might lead to more difficulties than no projections at all. Although an analysis of the quality of COPS is beyond the scope of this report, there are indications from the literature we examined that the quality is acceptable. The COPS’ methodology has certainly evolved to reflect improvements that have grown out of the debate over reliability; thus the use of both supply and demand data. The OECD undertook an international comparison of employment projections for the period 1986-1992 and found that COPS was among the best of the four countries reviewed. Specifically, employment projections were found satisfactory for major occupational groups, although there was scope for improvement for occupational sub-groups (Bérubé, 2006: 7). The COPS team undertook their own evaluation some years later and similarly found that although the projections pointed in the right direction, they did not go far enough with respect to specific occupational groups.

⁸ For more than 200 occupational groups, the site provides job descriptions, including typical duties and the level and type of education, training, and skills required. The site also includes information on the gender and age of people who normally enter the occupation. Job Futures classifies forecasts of labour market conditions as either limited, fair or good. “Limited” means that stable work is difficult to obtain and retain and that wages will likely decrease. “Good” means the opposite is true.

⁹ Among their comments, Sharpe and Qiao observe that Canada’s system has the active participation of several federal departments as well as provincial governments; that data collection and delivery is well coordinated; that the information is delivered using various channels and formats, including Internet and CD-ROM; and that it involves both public and private sectors to maximize access and reduce cost.

A Canadian economist who has considered the COPS system and commented on the accuracy of its projections drew the same conclusion as the COPS team: the results were reasonable for broadly defined occupational categories, but disappointing for sub-groups (Smith, 2002: 78). The CCL, in the work cited earlier, did not judge the quality of the COPS projections, but implied that more accurate models are not really comparable because they are predicting for a restricted market (CCL, 2007: 78).

All occupational projections have certain limitations as outlined above. A concern that may be somewhat unique to COPS is that confidentiality restrictions imposed by the sources it uses mean some of the data used is not public; while this is not a problem with the technical matter of making projections, it is a problem with transparency. On the technical side, COPS' projections that take into account both supply and demand are at the national level only; these are the forecasts that are published in *Looking-Ahead*. COPS produces provincial-level projections for the demand side of the labour market only. National (demand and supply) and provincial (demand only) projections are made available to the provinces where users can either use them or change them as they see fit.

Use

The quality of occupational projections is clearly important. However, even the highest quality projections are of no value if they are not used.

So how well is COPS used? And, given our interest in the demand side of the labour equation, how well are the projections used to predict demand and to what extent do employers use the material?

Although the print and electronic publications represent serious attempts to make the projections available, it is difficult to know how well they are used, partly because two federal government departments are involved and partly because the actual projection is combined with related information to make it more useful to certain groups through Job Futures. Furthermore, there has been no published report that evaluates usage.

Looking-Ahead is printed only when a hard copy is needed for events such as conferences and meetings. Instead, HRSDC encourages people to download *Looking-Ahead* from the Internet. Whereas HRSDC is unable to report the number of hits there are on *Looking-Ahead*, the Job Futures website has between 110,000 and 200,000 "visits" a month.

By themselves, these "hard" data are not very useful. Even the number of website visits is of limited use because the nature of "visits" is unknown. In any case, they would not reveal the extent that users take advantage of that information. The Job Futures website includes a questionnaire that users are encouraged to complete to provide information on who they are and their experience with the site, but this either has not been analyzed or is not available. In any case, as structured, the survey would provide information on Job Futures as a package and not just on the use of the occupational projections (derived from COPS).

There are “soft” data that suggests usage is positive. Those responsible for the Job Futures site report¹⁰ that they believe about half of the users are potential immigrants, with the remainder being young people and career counselors. Smith (2002: 88) makes similar comments when he says it is “used most extensively by students and job seekers.” The COPS team works with a “COPS Partnership” of provincial and territorial governments that either use the projections or build on them to create forecasts for their own jurisdiction.

Of the 10 stakeholders (employers, school boards, academic researchers) interviewed for this study (see section 5 below), four were aware of COPS and had used it in a variety of ways:

- to teach career counselors how to use this type of data for labour market projections;
- for a report on labour market trends in a particular industry; and
- by a college (using provincial-level data derived from COPS) to inform programming at the school and to convince the province about the need to support the school.

It is surprising that four out of 10 stakeholders were familiar with COPS at all because COPS is the data source behind the products that are more commonly used. These people would more likely know about Job Futures, but we did not ask stakeholders about their use of that product.

Summary

Occupational projections are an important part of the labour market information system. They can be useful for both the supply and the demand sides of the labour market. Companies may adjust their human resource strategies in light of information about projected shortages or surpluses in key occupations. Education and training institutions may use such information to modify their course offerings (and governments may modify their human resource programs) to better serve expected labour market needs. Students may plan their course of learning, and their parents and career counsellors use the labour market information to give advice.

However, we have also seen that there are limitations in what we can expect of occupational projections, particularly in terms of their reliability when looking at narrowly specified occupations, or in looking at local, as opposed to national, trends.

Canada is one of few countries that has a national occupational projection system. COPS has received favourable reviews for the quality of its projections. However, it is not clear whether these projections are used extensively. More research in that regard would be helpful.

Good labour market information ought to help people find paths to jobs that are a good fit for them. However, how well, in practice, are the skills and knowledge of Canadian workers used in their workplaces? Are the findings different for younger workers? We turn to these questions in the next section of the paper.

¹⁰ Personal communication with Sylvie Girard, October 2, 2007.

4. Skill Utilization and Skill Development in the Workplace

A major public policy concern that has emerged in recent years is whether there is a good match between the skills and knowledge that are supplied to the labour market and the skills and knowledge employers require. From the perspective of entrants into the labour market, the issue is the extent to which they are able to find employment that uses their skills. From the employer perspective, the concern is whether they – and the Canadian economy in general – are able to find suitably skilled staff.¹¹

This report focuses on the experience of young adults in the labour market, although skill utilization is a particular concern for immigrants as well.¹²

Some Theory

Riddell (2007b: 57-62) outlines three theoretical perspectives that are used to “explain observed relationships between human capital acquisition and labour market and social outcomes”: human capital, signaling/screening, and job-matching or information-based models.

Human capital models are based on the idea that investments are made in acquiring skills and knowledge in order to improve one’s productive potential, which leads to improvements in future earnings. There is “general” (readily transferable across different employers) or “specific” human capital. The latter can be either industry- or firm-specific. Literacy would be a “general” skill, as would a liberal arts degree. Mining engineering would be an industry-specific skill, and a specialization in the software used to analyze core samples might be an example of a firm-specific skill. Individuals are unlikely to invest in “specific” human capital because it is less transferable, which means that industries and firms will need to make these investments, operating either individually or as employer groups

In the signalling/screening model, when employers are recruiting they have imperfect information on an individual’s capabilities and so use education as a signal of future productivity. These models also predict that higher earnings result from higher ability rather than higher education.¹³

In the job-matching or information-based models because neither an employee nor an employer can be certain of the quality of a match at the point of hiring, some job shopping will result. This job shopping or instability is about searching for a good match and is important to earnings growth among young workers. Section 5 contains examples of things that individuals, educational systems and firms can do to improve the matching process. Opportunities for employers to work with schools to give students a sense of what jobs are like and what employers are looking for are examples.

¹¹ Labour economics uses the term “matching” to describe the quality of the “fit” between a worker and a firm, and “job shopping” (by workers) and “worker shopping” (by firms) to arrive at a match between worker and firm. “Mobility” refers to the movement of workers between jobs.

¹² Although Canada needs to remain competitive in a world market for well-educated immigrants, it is not clear we are providing a welcoming working environment: between a quarter and a half of immigrants with university educations are working in jobs that require high school or less (Wald and Fang, 2007: 3-4).

¹³ Riddell (2007b) provides empirical evidence of a causal effect of education on earnings, suggesting that not all of the relationship between earnings and educational attainment can be explained by signaling.

Livingstone (2002: 5-7) looks at a different way of distinguishing theoretical frameworks for analyzing the relationship between learning and labour market outcomes. He notes that such theories can be grouped as supply-side, demand-side, or a combination of the two.

Supply-side theories, such as “human capital” theories, suggest that more education gives workers the “intellectual capital” needed for a more productive economy. That is, as the level of education rises the demand for those skills rises and contributes to economic development.

Demand-side theories hold that employees and employers react to trends, rather than influence them, and the theories might be either optimistic or pessimistic. Optimistically, demand-side theories argue that the educational system needs to produce workers with the complex analytical skills needed by a “knowledge-based economy.” Pessimistically, the theories argue that underemployment and unemployment will result as modern production systems lead to deskilling of job requirements or automation.

Supply-demand theories emphasize relationships among education, employers and state agencies. Employers and some employee groups may raise entry criteria when there is an oversupply of employees, and thus use formal education to screen admission to jobs. This leads to the idea that we are creating a “credential society” in which job entry can be controlled by groups with the power to increase qualifications.¹⁴ These theories would also argue that both an undersupply of qualified applicants and greater productivity could lead to changes in job performance requirements.

Livingstone believes supply-demand theories provide better explanations of education-employment relations and uses them to argue that *underutilization* of knowledge and *underemployment* will be most common among those with the least power, including younger people, minorities, recent immigrants, the disabled, and single mothers. These theories also hold that demand – the number and types of jobs available – is influenced by “competition, technological innovation, and conflicts between employers and employees over working conditions, benefits and knowledge requirements” (Livingstone, 2002: 6) and that the supply of labour is altered by changes in population, household needs and legislation. At the same time, the demand for education increases as people seek the knowledge, skills and credentials needed in a changing society. Thus, in Livingstone’s analysis, there are always “mismatches” between employers’ requirements and the supply and qualifications of job seekers.

Livingston goes on to note that supply-demand theories hold that “an excess of ... qualified job seekers over the demand for any given type of job” is likely in societies (such as Canada) in which equal educational opportunity is promoted and in which both “employers and job seekers make mainly individual employment choices... These same dynamics (will) generate formal under-qualification of some workers, particularly older employees who are experienced in their jobs and have had few incentives to upgrade their credentialed skills” (Livingstone, 2002: 7).

¹⁴ The use of education as a screen or filter applies most obviously and appropriately to specialized occupations, whether trades or professions. However, employers use education as a filter for non-specialized occupations as well. In any case, the aims of education are broader than a specific occupation and broader than imparting basic knowledge and skills to youth.

Referring specifically to the mobility involved in finding a match between worker and employer, Sofer (2000: 11) observed that there is no unanimously accepted single theory of that mobility. She goes on to note that alternative theories to explain supply and demand have developed largely because of the lack of relevant information on training and the characteristics that lead to a good match. No doubt, one reason for the lack of data is that the connection between schooling and work is becoming more complicated.¹⁵

Some Evidence

Research suggests Canada has a greater “mismatch” between education and employment than other countries, whether the population as a whole or young people is considered.

Referring to results for the Canadian population as a whole in comparison with other countries, Wald and Fang (2007: 25) note that “higher educated Canadians in general do not fare well. For example, in 2001 the unemployment rate among workers in Canada with post-secondary education was 4.5 percent compared to around 2 percent in the United Kingdom and United States and returns to schooling in Canada also lagged that in the United Kingdom, the United States and France by a wide margin.”

Referring to young people with higher education, de Broucker (2005: 34) reports that a third of university and college graduates between the ages of 25 and 29 works in low skill jobs.¹⁶ This is about the same as the rate in the United States, but double the rates observed in the United Kingdom, Germany, Netherlands and the Scandinavian countries.¹⁷

These data might suggest that a considerable number of people with a high level of education experience difficulties obtaining employment that uses the skills they have developed at university or college. Even those who say their “current job was ‘very related’ to their most recent program of study” are likely to report feeling over-qualified (Krahn and Hudson, 2006: 55). Feelings of over-qualification were especially prevalent among those working in semi- and unskilled jobs, but were still common among those in skilled and managerial/professional occupations (Krahn and Hudson, 2006: 56). At the same time, Krahn and Hudson find that, on average, young people with post-secondary credentials clearly do better in terms of employment and earnings than do those without such credentials. Nonetheless, some argue that graduates have more education than is needed to do the jobs they obtain (Sicherman, 1991; Bartel and Sicherman, 1995; Bailey, 1991; Livingstone and Scholts, 2006; Li, Gervais and Duval, 2006).

¹⁵ Krahn and Hudson (2006: 6) note that this developing complexity is a theme of the School to Work research literature. Specifically, they note that “given rapid social and economic change over the past several decades, (school-to-work) pathways and processes are more complicated and their outcomes less certain than they were a generation ago.” They identify two additional themes: “(First) On average, it pays to stay in school, but investments in PSE do not guarantee successful employment outcomes. (Second) Young people from more advantaged backgrounds are, on average, more likely to go further and do better in the PSE system and, as a result, are more likely to obtain more rewarding jobs.”

¹⁶ The grouping of occupations into high skilled or low skilled is described in de Broucker (2005: 29).

¹⁷ Writing in 2000, de Broucker, Gensbittel, and Mainguet describe the “classic” approach to indicators of youth transition and an OECD Working Group’s attempts to improve these indicators.

This situation has been referred to as “over-education,” “over-qualification,” and “underutilization.” Li, Gervais and Duval (2006: 3) refine “overqualified” to consider those who might be “seldom,” “chronically,” or “always” overqualified and find that “nearly one out of every five people in the workforce was overqualified for their job at some point during 2001.” Livingstone and Scholtz (2006: 14) use self-reported perceptions to estimate the rate of underutilization at around 30 percent, and go on to suggest that underutilization may be becoming endemic (Livingstone and Scholtz, 2006: 66) and an “enduring and growing issue that calls for job redesign and economic reform even more than for more coherent education and training initiatives” (Livingstone and Scholtz, 2006: 68).

There are conflicting theories and data dealing with the extent to which those with given skills are using those skills. On the other side of the debate, it is argued that the incidence of reporting over-qualification decreases with age. (See, for example, Lowe and Schellenberg, 2001.) Such findings might suggest inflated expectations on the part of recent graduates, declining expectations as time from graduation increases, the increased likelihood of finding a good “fit” as one ages, or just the conventional wisdom about young people taking or needing time and experience to explore options. In order to shed further light on this debate, we took a look at relevant data from two key sources, the *Workplace and Employee Survey* and *Rethinking Work*.

Data from the *Workplace and Employee Survey* and *Rethinking Work*

Given all the talk of a “new economy” or a “knowledge-based economy” that depends on worker’s talents, it is important to stand back and examine how well Canada is doing at giving workers opportunities to make use of existing skills and develop new ones. Canada has one of the most highly educated workforces in the world, based on post-secondary educational credentials, so it is important to know how effectively this education is being used in workplaces.

We are particularly interested in how younger workers (those under 25) fare on these issues. Are young people able to fully contribute their skills and abilities in their jobs? Are young people going to firms that train their staff? Do young people feel the skills requirements of their jobs have increased or remained the same? To answer these and other questions we examine select data from two main sources: The *Workplace and Employee Survey* and *Rethinking Work* (these surveys are described in detail in section 2, Methodology).

Perceived Opportunity to Contribute One’s Skills and Knowledge at Work

In a knowledge-based economy, it is essential that workers are able to contribute their skills, knowledge and ideas (Ekos and Lowe, 2005). Data from the *Rethinking Work* survey (see above for details) allow us to examine some of these issues in more detail.

The results are generally positive. When asked how frequently they feel that they fully contribute their skills, knowledge and abilities in their job, most Canadian workers surveyed (78 percent) “often” or “always” feel they fully contribute their skills, knowledge, and abilities (Table 1). The figures were similar, although slightly lower (73 percent) for workers under 25.

Eight percent of workers under 25 are likely to report that they “never” or “rarely” feel that they fully contribute, compared with half that percentage (4 percent) of workers 55 and older. There is a corresponding difference in those age groups with respect to their reporting that they “often” or “always” fully contribute: 73 percent of those under 25 compared with 82 percent of those 55 and older (Table 1). This suggests that perceived over-qualification declines a little with age, consistent with others’ findings, although it still remains sizeable (Wald and Fang, 2007: 32; Lowe and Schellenberg, 2001; and Boothby, 1999). The pattern for “sometimes” is similar.

Table 1. How Frequently Do You Feel that You Fully Contribute Your Skills, Knowledge and Abilities?

	Overall	<25	25 to 34	35 to 44	45 to 54	55+
	<i>Percentage of Employees</i>					
Never	2	1	2	2	2	1
Rarely	4	7	4	4	3	3
Sometimes	16	19	17	16	14	13
Often	40	36	41	41	41	38
Always	38	37	35	37	39	44

Source: Rethinking Work, Canadian Worker Survey, 2004 (n=2002), as reported by Ekos Research Associates and The Graham Lowe Group.

Note: Columns may not add to 100 percent due to rounding.

Do Canadian workers feel they can take initiative in their jobs? A majority of Canadian workers (80 percent) indicate that they are able to “often” or “always” take initiative in their job (Table 2). The findings were almost identical for younger workers, with 79 percent saying they were “often” or “always” able to take initiative in their job.

Table 2. How Frequently Do You Take Initiative in Your Job?

	Overall	<25	25 to 34	35 to 44	45 to 54	55+
	<i>Percentage of Employees</i>					
Never	1	1	1	1	1	1
Rarely	3	4	5	3	2	2
Sometimes	15	16	17	14	16	14
Often	39	41	37	42	38	37
Always	41	38	40	39	42	45

Source: Rethinking Work, Canadian Worker Survey, 2004 (n=2002), as reported by Ekos Research Associates and The Graham Lowe Group.

Note: Columns may not add to 100 percent due to rounding.

As shown in Table 3, 60 percent of Canadian workers feel they “often” or “always” learn new ways to do their job better. Younger workers (those under 25) reported almost identical findings at 61 percent.

Table 3. How Often Do You Learn New Ways to Do Your Job Better?

	Overall	<25	25 to 34	35 to 44	45 to 54	55+
	<i>Percentage of employees</i>					
Never	4	3	6	4	4	2
Rarely	9	11	10	8	9	11
Sometimes	27	25	27	28	25	27
Often	36	35	39	34	36	34
Always	23	26	19	24	25	24

Source: Rethinking Work, Canadian Worker Survey, 2004 (n=2002), as reported by Ekos Research Associates and The Graham Lowe Group.

Note: Columns may not add to 100 percent due to rounding.

It is noteworthy that 40 percent of workers overall have infrequent or no opportunities to find new ways to do their jobs better (“sometimes,” “rarely,” or “never” categories), which suggests room for improvement in Canadian workplaces. These findings were almost identical for younger workers and the other age groups, which raise questions on how to fully tap into the talents of workers of all ages.

Data from the WES also allow us to look at issues of perceived over-qualification, as well as opportunities for skill development, and job satisfaction. Custom data analyses were provided by Statistics Canada on select questions from the employee side of the 2003 and 2004 WES. The results are presented below.

Minimum Education for the Job

The WES asks workers for the minimum level of education *they perceive*¹⁸ is required for their current job (as reported by the worker) (Question 8). As shown in Table 4, workers provide a wide range of responses. Over 33 percent overall say that a high school diploma is the minimum education required for their jobs, followed by a post-secondary trade certificate or college diploma (21 percent), and university degree (16 percent). Approximately 18 percent of workers said there was no minimum educational requirement for their job. This finding is difficult to interpret, but it is likely the workers' lack of awareness of a minimum education requirement for their particular job; employers would respond differently.

The perceived minimum education required for their jobs reported by younger workers (under 25) included: some high school (19 percent); high school diploma (34 percent); and a post-secondary trade certificate or college diploma (11 percent). Only 4 percent of younger workers reported that there was no minimum education required for their jobs. As with the results for all workers, we can speculate that this is due to a lack of awareness by the worker of any actual educational requirement.

Table 4. Perceived Minimum Education Required for Job, by Age

Minimum Required	Total	<25	25 to 34	35 to 44	45 to 54	55+
	<i>Percentage of Employees</i>					
Less than high school	7.8	19.3	5.7	7.0	5.9	8.1
High school graduate	33.0	33.6	30.2	35.1	34.6	29.4
Some post-secondary	4.8	X	5.1	5.0	5.1	5.0
Post-secondary trade certificate or college diploma*	20.8	10.5	23.9	22.4	21.2	18.8
University degree	16.1	2.4	18.0	16.9	18.1	18.1
None – unaware of a minimum education required	17.6	3.6	17.2	13.7	15.2	20.5

Source: Workplace and Employee Survey (2003) – Employee Survey.

Note: X: Cell count too small to be reliable.

* Includes those with some university, but not a degree.

¹⁸ We recognize that workers' perception of the minimum education required for their jobs do not necessarily match reality. However, we take the view that if perceived educational requirements substantially exceed actual educational attainment, this does suggest a strong possibility that workers' skills and knowledge are not fully used on the job. This would be particularly the case if such a discrepancy were to persist among workers with considerable tenure in the same job. Unfortunately, we do not have data on perceived over-education by job tenure. However, we do have it by age, which ought to be correlated with job tenure.

It may be useful to also highlight the perceptions of workers 25 to 35 years old because many of the younger workers (under 25) may not have had time to complete their education when answering the WES survey. Workers aged 25 to 34 are much less likely to say that some high school is the minimum education required for their jobs (6 percent). This compares with 19 percent for workers under 25. Workers aged 25 to 34 are also more likely to say that the minimum education required for their jobs is a post-secondary trade certificate or college diploma (24 percent) or a university degree (18 percent). These findings may reflect the higher educational attainment that workers 24 to 34 have attained and that their jobs at this age may also demand higher skills and education. However, it is striking that, even for the 25 to 34 age group, only about 42 percent indicate that a post-secondary degree or diploma is required for their job.

Educational Mismatch and Over-qualification

So how do the minimal educational expectations of their jobs, as reported above by workers in the five age categories (Table 4), compare with the actual level of educational attainment of these groups? There appears to be a mismatch between the two, based on data from the 2003 WES, which allows us to make this comparison. In Table 5, we provide data on the actual educational attainment of workers for these five age groups compared with data on perceived minimum education for the job as reported in Table 4.¹⁹

For the under 25 age group, 40 percent have a post-secondary trade certificate, college diploma or some university (but with no degree), but only 11 percent perceived this as required by their jobs. The figures for a university degree are 5.2 percent and 2.4 percent, reflecting the youth of this group.

On this issue, it is particularly important to look at the 25 to 34 and 35 to 44 age groups because many of the younger group will not have completed their formal education and because many of that group will be in entry-level jobs and will have had little opportunity to test their ability to find jobs that match their skills and knowledge.

Does the mismatch between educational attainment and perceived education required for the job continue for workers in the older age groups? The answer appears to be yes.

Although only 24 percent of workers aged 25 to 34 perceive that a post-secondary trade certificate or college diploma is the minimum education required for their job, 42 percent of them actually have this (Table 5). Likewise, only 18 percent of these workers said that a university degree was the minimum education required for their job, but 25 percent of them have a university degree. So some perceived over-qualification seems to persist into the 25 to 34 age category.

¹⁹ Data for Table 5 from the 2003 WES: perceived minimum education for job (Question 8) and actual educational attainment (Question 50).

Table 5. Actual Educational Attainment versus Perceived Minimum Education Required for the Job

Minimum Required	15 to 24		25 to 34		35 to 44		45 to 54		55+	
	Attained	Required	Attained	Required	Attained	Required	Attained	Required	Attained	Required
Less than high school	19.4	19.3	7.0	5.7	8.3	7.0	10.8	5.9	19.8	8.1
High school graduate	22.2	33.6	15.2	30.2	20.8	35.1	22.0	34.6	19.3	29.4
Some post-secondary	13.0	X	11.2	5.1	10.2	5.0	9.4	5.1	7.9	5.0
Post-secondary trade certificate or college diploma *	40.2	10.5	41.8	23.9	41.9	22.4	39.0	21.2	34.2	18.8
University degree	5.2	2.4	24.9	18.0	18.8	16.9	18.8	18.1	18.8	18.1

Source: Workplace and Employee Survey (2003) – Employee Survey.

Note: X: Cell count too small to be reliable

* Includes those with some university, but not a degree.

For workers aged 35 to 44, 22 percent of them felt that a post-secondary trade certificate or college diploma was the minimum education required for their job, but 42 percent of them have this. The gap with respect to university education is narrower: 19 percent of workers aged 35 to 44 have a university degree; 17 percent of these workers felt this was the minimum educational requirement of their job. The pattern for those over 45 is similar to that for the aged 35 to 44 group (with a sizeable gap in relation to trade certificate or college education, but almost no gap with respect to university education). Wald and Fang (2007), also using data from the WES on educational attainment and perceived requirements of the job, find that the “over-educated” are, on average, 38 years old – not much younger than the figure of 39.7 years for the “matched” or 42.3 years for the “under-educated.” It appears that we are underutilizing educational skills in all age groups, especially with regard to college education.

Previous work by CPRN (Brisbois, 2003), compared over-qualification in Canada to 16 other OECD countries. The study asked, “How well do you think your skills match the demands imposed on you by your job: the demands are too high, they match, the demands are too low, or don’t know?” As shown in Table 6, workers under 25 years of age are most likely to report feeling over-qualified for their jobs. This pattern is consistent across all countries, with the exception of Germany and Luxembourg, but is greatest in Canada. Almost a quarter of the under-25 age groups in Canada (23.7 percent) report feeling over-qualified. Young workers in the United States rank second in this regard, with 19 percent of the under-25s reporting feeling over-qualified, but they are followed closely by the Netherlands, Italy and Sweden, where 17 percent of the under-25s report feeling over-qualified.

The percentage in Canada feeling over-qualified declines sharply with age, dropping in Canada in the 25 to 44 group to 11.5 percent, under half that reported for the under-25s. However, the figure for the 25 to 44 age group is still relatively high among OECD countries – third highest among the 17 countries examined.

One explanation for why youth are more likely to feel over-qualified for their jobs is that many of them work part-time in the service sector while in school, and often in retail and food services, where skill requirements tend to be lower. However, it is interesting to note that although 42 percent of employed youth in Denmark worked part-time, similar to the rate in Canada, only 9 percent of them feel over-qualified for their jobs.

As noted in the report *Rethinking Work – Understanding the Canadian Workforce and Workplace* (Ekos and Lowe, 2005), these findings pose an interesting policy question: what is the appropriate level for the skills indicators, given Canada’s aspirations as a knowledge-based society and economy? For example, should we strive to provide 90 percent of all workers with workplace opportunities to develop and apply their knowledge and skills?

Table 6. Percentage of Workers Who Feel Over-Qualified for Their Job, by Age

	Total	Age (%)		
		<25	25-44	45-64
Austria	8.0	15.0	8.0	4.7
Belgium	5.0	8.4	4.8	4.3
Canada	11.1	23.7	11.5	6.3
Denmark	5.7	8.7	6.4	3.2
Finland	5.0	13.6	5.4	2.5
France	4.6	10.7	4.7	2.9
Germany	7.3	6.6	7.5	7.4
Greece	5.9	7.5	4.7	6.9
Ireland	7.4	13.8	7.3	3.6
Italy	10.5	17.1	11.6	6.4
Luxembourg	7.8	7.0	10.4	2.0
Netherlands	11.1	17.2	10.8	8.6
Portugal	6.0	8.2	6.7	4.4
Spain	7.5	14.3	7.6	4.8
Sweden	7.7	16.9	9.2	4.4
United Kingdom	8.1	13.0	8.5	5.7
United States	14.2	18.6	15.8	10.4
17-Country Average	7.8	13.0	8.3	5.2

Source: As reported in Brisbois (2003).

To the extent that over-qualification exists in the Canadian labour market, it may be related to the persistence of a large low-wage sector of our economy. Low-paid work has represented a large share of the Canadian labour market for a long time.²⁰ However, it is persisting in the face of economic growth and a more educated workforce. For example, we looked at data on wage rates from the *Labour Force Survey*, focusing on employed individuals 20 years of age or older who are not full-time students. In the year 2000, 17.5 percent of these workers – more than 1 in 6 – earned less than \$10/hour. After five years of strong economic growth, in 2005 19.1 percent was earning the equivalent (inflation-adjusted) hourly rate of \$11.28.²¹ Why was the strong aggregate performance in the economy during the period 2000-2005 not accompanied by any reduction in the share of people earning very low wages? The data we have examined above suggest that if we want to improve the extent to which high-level skills and knowledge are used in the Canadian labour market, we need not only to act on the supply side (facilitating participation in PSE), but also the demand side (encouraging a shift in demand towards highly skilled workers, which ought to be accompanied by more well-paid jobs).

Changes in Skill Requirements

The WES asks employees (Question 28) about the change in their job skill requirements, “Since you began working in your current job, have the overall skill requirements of the position: increased, stayed the same or decreased?” As shown in Table 7, overall, 51 percent of employees said that the skill requirements of their job had remained the same, and 49 percent said the skill requirements of their job had increased. However, younger workers were much less likely to say the skill requirements of their jobs had increased (25 percent) and a majority (75 percent) said the skill requirement of their job had remained the same. These findings could mean younger workers are more likely to be in jobs where the skills requirements do not change, but they also could reflect lower job tenure for such workers: young workers may have had less opportunity to experience an increase in skill requirements.

Table 7. Changes in Skill Requirements, by Age

	Overall	<25	25 to 34	35 to 44	45 to 54	55+
	<i>Percentage of Employees</i>					
Skill requirements: Increased	48.6	25.1	44.8	51.3	53.6	52.6
Skill requirements: Remained same	50.6	74.5	54.7	47.8	45.5	46.6
Skill requirements: Decreased	0.8	X	X	X	X	X

Source: Workplace and Employee Survey (2004) – Employee Survey (n=25,300).

Note: X: Cell count too small to be reliable.

²⁰ See Morissette and Picot (2005).

²¹ Source: 2000 and 2005 Labour Force Survey micro datafile. Calculations limited to employed persons 20 years of age or older who are not full-time students.

Workplace Training

Having the opportunity to develop existing skills and learn new ones is important to a worker's career development. At the same time, it builds an organization's reservoir of knowledge and skill. Several questions the WES asks related to training issues are summarized in Table 8.

Over one-third of all workers say they had received formal classroom training in the past 12 months, compared to only 22 percent of workers under 25. However, 34 percent of younger workers said they had received formal job-related training in the past 12 months. This was slightly higher than the overall figures for all workers at 29 percent.

The WES also asked employees (Question 29) about changes in the availability of training, "Since you began working for this company, has the amount of training available to employees: increased, remained the same, or decreased?" Table 8 shows that almost 65 percent of workers overall said the amount of training had remained the same. The figure was higher for younger workers at 77 percent. At the same time, younger workers were less likely to say the amount of training available had increased (20 percent) compared with the overall figure of 30 percent.

Despite the data showing that younger workers were less likely to receive classroom training and were less likely to say the amount of training available had increased, a majority (69 percent) of younger workers say the "amount of training is about right for their job" (Table 8). This compares to a figure of 66 percent for workers overall. In fact, younger workers are less likely than any other age group to say that the "amount of training available is too little for the job." That could be good news, or a sign that many young workers are in jobs that are not very demanding.

Table 8. Availability and Satisfaction with Training, by Age

	Overall	<25	25 to 34	35 to 44	45 to 54	55+
	<i>Percentage of Employees</i>					
Training in Last 12 Months						
Received classroom training	35.2	22.3	40.4	37.2	36.0	28.5
Received job-related formal training	28.7	34.0	32.2	29.0	27.5	22.2
Changes in Level of Training						
Training increased	29.7	20.1	24.4	29.4	33.8	35.6
Training remained same	64.1	76.6	70.3	64.1	57.8	60.4
Training decreased	6.2	X	5.3	6.5	8.4	4.0
Satisfaction with Amount of Training						
About right for the job	66.1	69.0	66.5	63.2	65.0	72.6
Too little for the job	22.1	14.5	21.9	25.0	24.4	16.0
Too much for the job	0.9	X	1.1	X	X	0.7
N/A – No training required	10.8	14.9	10.4	10.9	9.8	10.8

Source: Workplace and Employee Survey (2004) – Employee Survey (n=25,300).

Note: X: Cell count too small to be reliable.

Job and Pay Satisfaction

Canadians' satisfaction with their jobs overall and specifically with their pay and benefits are shown in Table 9. Are there differences for younger workers? Sixty-eight percent of workers under 25 report being "satisfied" with their job – which is higher than ratings from workers in other age groups. However, only 22 percent of workers under 25 report being "very satisfied" with their job, which is lower than the ratings for workers in other age groups. At the same time, workers under 25, as are workers in other age groups, are more likely to say they are "dissatisfied" with their pay and benefits than their job overall.

Table 9. Job and Pay Satisfaction, by Age

	Overall	<25	25 to 34	35 to 44	45 to 54	55+
	<i>Percentage of Employees</i>					
Overall Job Satisfaction						
Very satisfied	32.1	21.8	25.4	33.3	35.3	39.3
Satisfied	58.4	67.9	62.6	57.3	55.5	54.3
Dissatisfied	7.2	8.5	7.8	6.6	8.1	4.6
Very dissatisfied	2.3	X	4.1	2.7	1.0	1.6
Satisfaction with Pay and Benefits						
Very satisfied	19.3	14.5	14.8	20.7	22.2	20.0
Satisfied	59.5	59.5	62.5	57.4	57.1	64.2
Dissatisfied	17.6	21.6	18.0	17.5	18.3	13.4
Very dissatisfied	3.6	X	4.7	4.3	2.4	2.3

Source: Workplace and Employee Survey (2004) – Employee Survey (n=25,300).

Note: X: Cell count too small to be reliable.

Summary

Data from the WES indicate that the educational attainment of young workers is substantially in excess of what they perceive to be the minimum educational requirements of their jobs. While this perceived over-qualification declines slightly with age, it remains substantial among prime age workers. Moreover, about half of all workers (and three-quarters of those under age 25) report that the skill requirements of their jobs have not increased since they started in that job. We need to consider whether any over-qualification in Canada's labour market is related to the large low-wage sector of our economy. That sector has persisted despite economic growth and a more educated workforce.²²

We might also expect skill utilization to improve if employers are better able to communicate their skill needs to potential employees. In the next section of the report, we look at examples of partnership between employers and schools, and consider what we might learn from them that could help more young people find pathways to success in the labour market.

²² For more information on low-paid work in Canada, see: Saunders (2005).

5. The Role of Employers in the School-to-Work Transition

Employers have the potential to play an important role in the school-to-work transition, by helping students make more informed choices about their learning and career pathways. Employers can contribute in many ways, such as by speaking in the school about career opportunities, communicating to regional labour market boards and/or directly with schools and colleges about what employers expect their skill needs are going to be in the coming years, mentoring young people, and offering co-op or “work-study” placements that give young people the opportunity for hands-on experience with an occupation while completing a high school, college, university or apprenticeship program.

We conducted 10 key informant interviews with stakeholders on how employers could better support effective school-to-work transitions, exploring their views on what works, what does not and why. The interview questions are in Appendix B. Stakeholders included persons from business, research organizations and school boards.

These interviews were not in-depth case studies and are not exhaustive; they provide examples of promising school-to-work transition programs. Below we describe the characteristics of these programs, the successes reported, the difficulties experienced, and ideas of the interviewees as to how to make such programs more effective.

Types of Partnership

Co-op/Internship Programs

Most of the larger companies that were interviewed offered co-op placement programs for students. These were generally paid positions (but some were unpaid) targeted at college and university students, usually lasting one school semester. Some companies also offered internal mentoring programs and formal paid internship programs, where a student would work at the company for a longer period of time than in a co-op placement. For example, IBM Canada has internship programs that last 16 months.

The Dexter Institute is a good example of a local college/employer partnership to help students with the school-to-work transition. The program, started in 2001, is a partnership between Dexter Construction and the Nova Scotia Community College (NSCC) to address the company’s critical skills shortage in the heavy construction industry. The company was having trouble recruiting young workers because they see heavy construction as summer employment rather than a career. The solution was the Dexter Institute – a strategic partnership between NSCC and Dexter. The result is a program offering a two-year heavy construction college diploma that targets students who are just about to graduate high school. The model offers a mix of learning methods (classroom time at NSCC, practical training, and paid work experience in all facets of the company). Dexter offers guaranteed employment in a growing industry upon graduation in the program. The company emphasizes careers in the construction industry, not just a job. As well, work assignments expose individuals to all aspects of civil construction. There is also a retention bonus – if students stay with Dexter for two years after graduation, they get half their tuition paid for.

Apprenticeship and Pre-apprenticeship Programs

The British Columbia Ministry of Education and the Industry Training Authority (ITA) (the provincial department responsible for training/apprenticeships) partner on two programs that have been initiated at the ministry or ITA geared to help with the school-to-work transition.

- Secondary School Apprenticeship Program (SSA) – SSA has been around for over 10 years and gives young people an opportunity to begin an apprenticeship while still in high school and to earn credits for doing so (dual credit). This involves working part-time (paid) with an employer willing to take on the student and commit to his or her training. This program has been growing recently very rapidly with an all-time record of 1,708 students who were active in SSA last year.
- ACE IT – ACE IT is an industry training program that is basically a pre-apprenticeship program. Students take courses that give them dual credit – high school graduation credits and credits toward an apprenticeship program (Level 1 technical training). It is a partnership between school districts and post-secondary institutions (funding formula); classes may be taught in high school or at colleges. Local employers get involved in developing ACE IT programs and help direct the curriculum. The objective is to have students graduate with their Level 1 technical training complete and their apprenticeship program underway.

Career Fairs and Talks

Many of the companies also were engaged in various forms of outreach to schools. This included career fairs and talks on campuses and high schools. Sometimes this was targeted outreach where a company was looking to hire for specific positions (mostly via on-campus recruitment). However, there were also more general discussions with students to simply make them aware of a particular company or industry, or trades in general. The goal of these more general outreach activities was to build awareness of future career paths (and the learning required to get there).

For example, Randy Callaghan, Field Personnel Advisor for PCL Construction in British Columbia, regularly gives talks to high school carpentry classes and gives them construction site tours. PCL sponsors their hard hats, safety glasses, vests, etc., which they donate to the school district. Mr. Callahan also keeps in contact with both shop teachers and counselors for prospective apprentices – often they come to him and say they have students they feel would be good candidates for apprenticeships. So it is a good recruiting tool for PCL.

Outreach/Awareness Building Aimed at Younger Students

Several organizations are involved in programs that are designed to *reach younger students* (junior and middle schools) to build general awareness of an industry or company. The following are two examples:

- YES 2 IT – or Youth Exploring Skills to Industry Training – is a joint initiative of the British Columbia Industry Training Authority (ITA) and the British Columbia Ministry of Education. The program has been in operation for approximately two years and is designed to increase awareness of trades among younger students (grades 6 to 9), as well as their

parents, educators and communities. The program provides an opportunity for youth to have hands-on experience applying some of the skills used in a variety of trade occupations. For example, students might build a fence. Funding and resources are available to schools, industry associations, and other community organizations. The idea is to tweak the interest of students in trades while they are still young.

- Trade Up is a partnership between Hydro One (Ontario) and its trade union (Power Workers Union). Information kits and a website have been targeted at different groups (students, parents, guidance counselors) to make them aware of career opportunities in the power industry in Ontario. The electricity industry is facing the demographic challenges of an aging workforce and a smaller talent pool of employees entering the electricity sector. It is hoped that programs like this will attract more people to the electricity sector and help grow the talent pool that electricity companies can draw from.

Toolkits

The Halton District School Board in Burlington, Ontario, has developed several tools to help every student plan their high school curriculum and to explore various career and post-secondary education pathways. This includes:

- Pathways planners for students: This helps students explore careers they may be interested in based on skills, interests and abilities.
- Myblueprint.ca: Every student in either the District or Catholic School Boards in Halton can access this online program to create an individual education plan. This shows students the PSE and career opportunities that are available to them based on their chosen high school curriculum.
- Schooltocareer.ca: This one-stop Web resource is about all experiential learning programs in the Halton District School Board.

The aim of these tools is to help students “value all destinations” and help students and parents build a pathway through high school towards the student’s chosen post-secondary destination and career.

The length of time these initiatives have been in place varies greatly by program and by organization. Initiatives such as co-op and internship programs have been in place in many organizations for 10 to 15 years. Some stakeholders noted that they were beginning to ramp up these programs because they see them as the best way for students to gain real work experience in an organization or industry they might be interested in. Other programs and initiatives are more recent. For example, school talks and visits have only been in operation in some companies for the past five years.

Who Participates?

The various partnerships/initiatives mentioned in the key informant interviews were geared towards high school students or university and college students. The target group varied greatly depending on the initiative.

- Co-op and intern programs were generally geared toward university and college students.
- The apprenticeship programs mentioned were geared toward high school students (those in grades 11 and 12).
- The audience for the various initiatives around outreach, awareness and general promotion about an industry or career paths varied greatly. Some were geared toward senior high school students, and some toward their parents. Other initiatives were geared toward younger students in junior and middle high schools to build a general awareness of an industry.

Some programs were quite specific concerning their target audience.

- For example, a private security firm offered co-op placements only for students who were 18 or older because this was a legal requirement.
- A high-tech company only currently recruited university or college students in specific areas of study to fit their business needs. The rationale is that they do not build jobs for students; they bring students into existing jobs. They are not making jobs to fit a specific demographic group, but rather bringing students in to do work they need to have done.

Communicating Employer Needs

How can employers better communicate what they are looking for?

Outreach with Schools

Direct outreach with students while in school (university, colleges, high schools, and even junior high schools/middle schools) was mentioned by many stakeholders as a primary way that employers communicate their skill needs. This may include:

- career fairs organized by schools, school boards, and university/college campuses;
- having recent graduates return to the schools and talk about their experience; and
- talks by employers in classes, which may include information about courses needed to pursue a particular occupation.

Some companies that traditionally only reach out to students in college/university are recognizing they need to reach students in high schools and build rapport and relationships with school district staff and students. Some are even reaching out to even younger students in middle schools (grades 7 and 8).

Outreach with Parents, Teachers, and Guidance Counselors

In addition to trying to deal directly with students, many organizations also try specific outreach activities geared toward parents, teachers and guidance counselors. Many noted that parents can often be a barrier to certain career paths, particularly trades because there is still a strong preference among parents and guidance counselors for their children/students to attend university. Parents have to be informed about alternate school and career paths (e.g. trades). This can include activities such as information sessions for parents and career counselors.

Free Media Publicity

Several interviewees noted that the constant media attention on the skills shortages in certain industries or particular trades has made selling their organization/industry much easier. This was particularly true in Alberta and British Columbia. Media has talked about skills shortages so much that the exposure has made students, parents and counselors much more aware of career opportunities in trades.

Measuring Success

Co-ops and internship programs measure success by the number of students they are able to attract, and how many complete it and go on to careers in that field. For school-business partnerships such as the Dexter Institute example, a measure of success is examining how many of the graduates of the program remain working at the company once they have completed the program and have their diploma.

The effects of mentoring, career talks in high schools and other general outreach initiatives are very difficult to measure. Most evidence is anecdotal and subjective. Is there an increasing number of people who are interested, and qualified, for a particular trade, industry or company? They can rely on accolades from school boards for doing these programs, but it is very difficult to identify if you have changed the mind or attitude of student in grade 10.

Some of those interviewed suggested that there needs to be a greater opportunity to work with school boards or appropriate provincial ministries to put tracking mechanisms in place.

With respect to pre-apprenticeship type programs for students in high school, measures may include how well a student is doing in particular programs. It was suggested that a measure of success may also include examining how many students go on to complete a full four-year apprenticeship. In one province, the training authority and the ministry responsible for apprenticeship programs are looking at the rates of students who are passing the Level 1 apprenticeship exam who are part of the programs in high schools. They would like to track the number of students who successfully go from the high school program to full journeyman status. (It was noted that they are graduating younger journeymen than before; therefore, getting them into the industry sooner as a result of the school/PSE/employer partnerships.)

Some school boards are starting to do research on the attitudes of parents and students in grades 8 or 9 about schooling and career aspirations, and tracking the numbers that follow different paths (to university, work, college, etc.). The Halton School Board is investing \$150,000 on a media blitz intended to get parents out to information sessions and to use the schoolboard websites. Do attitudes change? Do applications to specific programs in university/college/apprenticeship change? The board is getting baseline data this year on where they are now and setting plans for how/where they want these numbers to increase.

There is anecdotal evidence that programs such as ACE IT in British Columbia (which offers dual-credit courses for high school and PSE) is leading to a reduction in the high school dropout rate because students see a place for themselves and a future career path and are able to earn money while learning.

Some schools also ask parents if a program changed attitudes, helped the student complete high school, and whether or not the student found employment.

Keys to Success

There appears to be little formal evaluation of the kinds of programs outlined above. Participants in the interviews were asked for their views about the characteristics of programs that seemed to drive successful outcomes. They identified the following “keys to success.”

Co-op programs work well when they **provide a clear connection between the schooling and a future career**. At the same time, students often get the benefit of hearing first hand from older co-workers who encourage them to stay in school and graduate. Focusing on providing a career path, and not just an entry job, has been important for the success of programs such as the Dexter Institute, so that students can see a range of potential career opportunities flowing from the program.

The Halton School Board has tried to **increase awareness** about technical education in one of their high schools (White Oaks) by involving students in a robotics competition (the single largest non-sporting event in North America). Local business supports the team by donating money. Students have six weeks to build a robot. This year they brought in grade 8 students (at risk) to see if they could change their attitude towards school by showing them a possible pathway in technical education at the school. The school was the first non-American school to ever win the competition.

Dual-credit programs can be very attractive to students unsure about post-secondary education because they offer both high school and college credits while working toward high school graduation.

Both **employer and government support** is important. For example, the Automotive Industry Training Association (AITA) brokers the employer involvement and ACE IT screens the prospective students so employers know they have commitment and aptitude. This plus a recent skills shortage has contributed to recent success.

Success in trades programs largely depends on the **availability of qualified teachers** and facilities. A strong trades teacher and up-to-date training facilities can give students good opportunities for placement and experience.

Earning money while learning (as in many apprenticeship programs) is very beneficial to many students who may not otherwise have chosen to continue on to post-secondary education.

Examples of Difficulties That Have Been Experienced in Some Programs

Those interviewed for this study were asked about any factors that, in their experience, have impeded the success of school-to-work programs, how they felt these programs could be improved, and if there any obstacles to greater use of these programs.

- Resource limitations were the most common obstacles noted to greater use of some of the school-to-work programs mentioned. This affects both schools and companies; the former do not always have enough resources to upgrade facilities or to expand the reach of the program, and the latter are able to visit only so many schools/campuses. There can also be a lack of willingness by business to step up to the plate and do something about the skills shortage problem, with this being seen as a government responsibility. As a result, there are sometimes not enough spaces in companies for the number of students who want to participate in a co-op or apprenticeship program.
- Some of those interviewed noted that their mentoring programs may not have been as strong as they might have hoped. It was difficult to assess why, and some were reworking their programs. It might be because these programs are very labour intensive and matching students with a mentor can sometimes be difficult.
- Some programs can be complicated to administer because of government funding formulas.
- Some college programs are geared toward adults, so need to take into account the fact that partnerships with high schools involve adolescents. Many high school students feel anxious attending classes in a college.
- Programs are often oriented towards larger businesses, missing opportunities to work with smaller ones.
- Some industry programs are only offered away from where high school students live – so there are supervision issues and transportation issues (getting to and from a program).
- Even where the resources are available, it can be a challenge to get or keep trades teachers in high schools or colleges when they are in high-demand industries that can offer much higher salaries. This is compounded by the fact that in certain areas of the country, a large number of teachers will be retiring in the next few years. Some schools are actively involved in helping to fast track tradesmen who want to get their teaching certificate.
- Many businesses are not aware of apprenticeship programs that are offered in their area.
- There is still the perception by many companies that apprenticeships cost too much, whereas they aid productivity when utilized well. The Automotive Industry Training Association (AITA) in British Columbia runs industry forums to try to counteract the perception that apprenticeships are not a good investment. They cite a report produced by the Canadian

Apprenticeship Forum that found that for every dollar spent on apprentices, the organization got a \$1.38 return on investment (ROI). In addition to the cost concerns, some companies are also worried about poaching apprentices once they have completed the program.

- Some from business indicated that they were the ones approaching school boards (not the reverse), and felt that school boards and government may not be as engaged as they should be on issues around skills shortages. They said that industry is engaged because they understand the demographics that are affecting them.
- Most parents aspire to have their children go to university. Many are not interested in considering alternate school/career paths. Some also “didn’t feel the current education system is built to meet the needs of the future.” We need to make a cultural shift in this country (especially parents and educators) to move away from the idea that everyone is going to graduate from university.
- Teachers and guidance counselors are also sometimes unaware of program options and/or emphasize the university pathway to the neglect of other opportunities.
- High school and college partnerships can lead to issues around who delivers what courses.
- Younger workers (teenagers) may not have the same work ethic as older more experienced workers.

Ideas to Improve School-Work Programs Involving Employers

Suggestions to improve school-to-work transition programs flowed from the analysis of successes and difficulties. These are some of the ideas:

- Improve awareness of programs among students, parents, teachers and business. The school boards and ministries of education need to promote school/work partnerships and encourage employers to offer (or offer more) co-ops, apprenticeships, internships, mentoring and job shadowing to students.
- At the same time, employers should actively seek to get involved with school districts. “Step up as an employer and hire some students, and treat them well. Kids need an opportunity to shine.” Firms can also provide in-kind-contributions (e.g. materials for school shop classes, such as hardhats, equipment, tool belts, steel toe boots, etc.) as well as in-kind time for employees to teach in the school setting.
- Get journeypersons to serve as real mentors. Some employers are training them to be mentors and say they are having success.
- Establish committees/advisory boards involving all partners to keep programs on track.
- Involve employers in program design and delivery.
- Change the culture in our communities to value other school/career pathways besides those that require a university degree. According to one stakeholder, we need to figure out how to “value all destinations without devaluing any destination.” University is good for some students, college is for some, apprenticeship, and the world of work, is best for some. “We need to ensure that students see the time they spend in high school as worthwhile and helping

them with their end goal, no matter what it is.” We need to have programs in place that are going to help them do this, no matter which path they decide to take.

- Manage expectations of students – not all programs will guarantee students a job in the end.
- Give instructors opportunities to update their own skills – time, training and money.
- Employers need to convince themselves that getting involved is a good thing to do even though it may not benefit their company directly (in terms of future employees), but rather may help their industry in general, as well as help young people find a rewarding career path. As one stakeholder noted, “Make a bigger pie and fight over the pie later,” when talking about getting more students in the apprentice system for their respective industry.

A Role for Unions in Career Pathways Programs

It is also important to recognize that unions can be important players in terms of conveying information about opportunities in the labour market and providing the training needed for certain career pathways. This is particularly the case in the construction industry, where unions operate hiring halls and run apprenticeship and training programs. Schools should consider working with unions to promote awareness of such career opportunities.

Summary

School-employer partnerships can play an important role in helping young people make informed choices in making the transition from school to work. These partnerships can involve many different kinds of activities, including co-op programs, apprenticeship and pre-apprenticeship programs, career fairs, school talks and mentorship. There are many promising initiatives in place. From interviews with those active in this area, it appears that school-work partnerships could be strengthened through:

- more resources for school-work programs;
- greater involvement of employers in their design and delivery;
- up-to-date training for teachers; and
- greater communication about these programs to students, parents, teachers and business.

6. Policy Implications and Research Gaps

What government policies and employer practices could help more young people in Canada make an informed choice about learning pathways leading to a career and improve the level of utilization of skills in the labour market? Answers are very important for the individuals obtaining a new credential and entering the labour market as well as for employers attempting to find suitable staff. As Canada's demographic situation changes and fewer young people enter the labour market, the rate of growth of the labour force will slow. Sound human capital development policies for Canada's youth will become increasingly important so that Canada does not waste anyone's potential.

Occupational Projections

Canada is one of the few countries that has a national occupational projection system. That system appears to be well regarded. HRSDC's work to develop and maintain COPS has been useful, as has its continued efforts to improve the quality of the forecasting and the creative work that has been undertaken to make the projections accessible. However, we feel strongly that it is time to evaluate the use of the projections, to ensure that the data are used as extensively as possible.

It may be that better publicity for the products that result from the Canadian Occupational Projection System (COPS) could help people make more informed choices on both the demand and supply sides of the youth labour market. Sharpe and Qiao (2006: 68-70) make this point in the wider context of Labour Market Information products.

Any evaluation needs to consider the use of the data and Job Futures by all groups, including employers. There is virtually no information on the extent to which employers use Job Futures. A thorough evaluation might reveal ways in which the projections could be packaged and disseminated to make them more accessible and useful to employers and employer groups.

We also recognize, however, that our young people need more than good information about labour market prospects. They also need career management skills that enable them to make plans as their own interests and the needs of the labour market evolve.

Helping People Find Paths Where Their Skills are Used

The data on skill utilization in this study suggest that, while Canada has an admirably high percentage of people with post-secondary credentials, it also has a relatively high percentage of young adults with diplomas and university degrees who see themselves as over-qualified for their jobs. While perceived over-qualification declines with age, it remains substantial with regard to holders of college diplomas.

We do *not* conclude from this that fewer young Canadians should pursue post-secondary education. Indeed, education "plays many important roles in society and the economy in addition to the labour market consequences."²³ Moreover, evidence from other research is clear that those

²³ Riddell (2007a: 27-28) elaborates on this idea.

with post-secondary credentials, and especially those with a university degree, are much more likely than others to do well in the labour market and to contribute to their communities in other ways.²⁴ However, the research does suggest that vocational options in high school should receive greater consideration and support, since such options can help encourage more youth to complete high school and continue their studies. As a stakeholder from Halton School Board says, we need to “value all destinations without devaluing any destination,” and “We need to ensure that students see the time they spend in high school as worthwhile and helping them with their end goal, no matter what it is.”

We also recognize the difficulty of predicting what skills will be in demand more than a few years into the future. For example, the current boom in demand for tradespeople might not last. This speaks to the importance of ensuring that there are bridges between various program options: that young people should be able to move between more vocational and more academic programs, and that articulation arrangements between colleges and universities can be strengthened while respecting the standards associated with a post-secondary degree.

Similarly, we need to recognize that young people will not have all the skills they will eventually want or need when they complete formal schooling. For many years, UNESCO (United Nations Educational, Scientific and Cultural Organization) and the OECD have promoted lifelong learning as the organizing principle for educational systems. As an organizing principle, lifelong learning would move us away from the idea that a person has to be all “schooled up” in youth. Instead, we would accept that people learn at different paces and have different learning needs, and we would make it easier for people to enter and leave the educational system at different stages of their lives.

We also need to recognize that Canadians acquire skills in a multitude of settings outside the formal educational system, and continue to develop ways to assess such learning so that the skills acquired are transferable.

Further research would be desirable on the gap between employees’ perception of their qualifications and the educational requirements of their job. Are Canadians with post-secondary credentials truly under-employed or is there some other reason why they are reporting a gap between their education and job requirements? It may be that reporting over-education expresses some other frustration about their job, that employees are not aware of the requirements of the job, or that the employers are setting higher requirements than are really needed. Employers might be setting higher requirements as a way to recruit staff who will be more productive and able to grow into a bigger job. It may be that employers recognize the productive potential of education and hire over-qualified staff in the expectation that they will help the company grow.

In order to get a better understanding of such issues, it would be helpful to look at the distribution of earnings, by age group, for each category of educational attainment. While more research is needed on the issue of over-qualification, the data are clear that the labour market in Canada is characterized by a persistently large low wage segment. Strong aggregate performance in the economy in 2000-2005 was not accompanied by any reduction in the share of people earning very low wages. If we want more young Canadians not only to acquire high-level skills,

²⁴ See, for example, Riddell (2007b).

but also use them in the workplace, we need to act not just on the supply side of the labour market (fostering high school completion and participation in PSE), but also the demand side (fostering an innovative, high value-added economy, to increase the share of jobs that is well-paid).

Connecting Schools and Employers

Both past research and our recent interviews (for this study) with employers and educators point to the important role that school-employer partnerships can play in helping young people make informed choices of learning pathways and in facilitating the school-to-work transition. These partnerships could be strengthened by:

- providing the resources needed to sustain school-work programs, and ensure that both the training facilities and the skills of the teachers are up-to-date;
- improving awareness of school-work programs among students, parents, teachers, and business;
- establishing committees/advisory boards for such programs that involve all partners;
- involving employers in program design and delivery;
- giving instructors opportunities to update their own skills; and
- calling employers' attention to evidence that investment in such programs is not only good for the students and the community, but also good for their business.

A caution that has been raised in such partnerships is that guidelines may be needed to help avoid undue employer influence on schools. This applies at all levels of the educational system.

Implementing policies and practices along these lines can help greater numbers of young Canadians find pathways that lead to sustained employment with decent pay, good working conditions, and career potential.

7. Conclusion

This study contributes to the CPRN research series on *Pathways to the Youth Labour Market* by looking at how information about the demand side of the youth labour market is conveyed to high school students, parents, educators, and career planning counselors and examining how well the labour market is utilizing the skills of young adults. By reviewing the literature, examining select data sources, and by talking with key stakeholders in education and industry (in both interviews and at a national roundtable), we have identified some areas that we believe need to be pursued by decision-makers.²⁵

- It is time to undertake evaluation of the use of the national occupational projections, such as COPS, to ensure that the data are used as extensively as possible.
- People need help to find paths that enable them to fully develop their potential and use the skills they acquire. Trades/vocational options in the high schools should receive greater consideration and support.
- Our education and training system should be organized to offer and to support lifelong learning, and impart career planning skills. We should make it easier for people to enter and leave the educational system at different stages of their lives.
- School/union/employer type relationships should be strengthened, which would help young people make informed choices of different learning pathways in the school-to-work transition.
- Future research should more closely examine the gap between employees' perception of their qualifications and the educational requirements of their job.
- More action may be needed to foster an innovative, high-value-added economy, so that as Canadians continue to increase their level of educational attainment, they are able to fully utilize their skills and knowledge.

We expect to pursue these ideas in more detail in the final synthesis report of our *Pathways to the Youth Labour Market* research series.

²⁵ Several of these recommendations echo those made 14 years ago by the Task Force on Transition into Employment of the Canadian Labour Force Development Board in their report, *Putting the Pieces Together: Toward a Coherent Transition System for Canada's Labour Force*.

Key Websites

www.jobfutures.ca/noc/browse-occupations-alphabet.shtml	The Job Futures website. From this site, the user can access sites for each province and territory.
www.hrsdc.gc.ca/en/publications_resources/research/categories/labour_market_e/sp_615_10_06/page00.shtml	<i>Looking-Ahead: A 10-Year Outlook for the Canadian Labour Market (2006-2015).</i>
www23.hrdc-drhc.gc.ca/2001/e/generic/welcome.shtml	The HRSDC National Occupation Classification (NOC) website.
www.oecd.org/document/5/0,3343,en_2649_201185_2465989_1_1_1_1,00.html	Home page of the OECD's Transition from Initial Education to Working Life project.
http://makingcareersense.org/	The "Making Career Sense of Labour Market Information," a British Columbia Ministry of Advanced Education site maintained in partnership with the Canadian Career Development Foundation and HRSDC. This site is an electronic version of Elaine O'Reilly's publication of the same name.
http://ccdf.ca/ccdf2/	The Canadian Career Development Foundation (CCDF) website.
www.lifework.ca/lifework/about.htm	The National Life-Work Centre website.
www.wz-berlin.de/ars/ab/qb/qb.en.htm	This is the English-language homepage of the Wissenschaftszentrum Berlin. It offers continuously updated sources of information on forecasting.
www.nall.ca/	Homepage of New Approaches to Lifelong Learning, a research network funded by the Social Sciences and Humanities Research Council of Canada (SSHRC).
www.wallnetwork.ca/	Homepage of Work and Lifelong Learning, a research network funded by SSHRC.
www.wln.ualberta.ca/	The Work and Learning Network at the University of Alberta. WLN is a community of individuals and organizations engaged in research related to work and learning policy, and practice.
http://recognitionforlearning.ca/index_e.php	Homepage of the Canadian Association for Prior Learning Assessment.
www.hdsb.ca/	Halton District School Board (Burlington, Ontario). Includes tools to help students plan their high school curriculum and to explore various career and post-secondary education pathways.

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Appendix A. A Note on Current Labour Market Projections (Using COPS)

This information is from the introduction to *Looking-Ahead: A 10-Year Outlook for the Canadian Labour Market, 2006-2015*.

Each year, the Strategic Policy Research Directorate (SPRD) of Human Resources and Social Development Canada (HRSDC) produces a detailed 10-year labour market forecast at the national level. HRSDC uses forecasting models to identify likely trends over the medium-term in the level, composition and sources of labour demand and labour supply, and in the industrial and occupational distribution of employment. A key objective is to identify occupations where the current and projected states of supply and demand suggest that imbalances could develop or persist over time.

The information derived from such projections helps in addressing some of the important policy issues facing HRSDC, including population aging, the expected slowdown in labour force growth and the future skill requirements of the economy. The information about future trends in the labour market can also be useful for workers, students and immigrants in their employment and education decisions. As well, the same information can be of value to employers in developing their human resources strategies. Of high interest to many is whether the broad trends in labour demand and supply that have been observed in recent years will continue in the future or whether significant changes can be expected.

More specifically, the report tries to answer the following questions:

How many jobs are expected to be created over the next decade?

In which industries and occupations will the new jobs emerge?

What will be the impact of retirements on job openings?

What kind of education is required to fill the new positions?

Will the new supply be sufficient to meet this new demand?

What occupations will face significant labour market pressures?

The report also looks at the performance of Canada's labour market over the past 15 years in order to compare the outlook with recent experience. The macroeconomic forecast that underlies the labour market outlook includes actual economic data up to 2005.

The report fills an important gap, as no other publication currently provides a comprehensive picture of the Canadian labour market. Many public and private organizations in Canada produce reviews of economic conditions and develop short- and medium-term forecasts. However, very few of them focus their reviews and forecasts on the labour market, and none undertake a detailed outlook by industry, skill level and occupation.

These projections are among the most comprehensive in the world because they forecast prospective growth in both demand and supply by occupation. After all, imbalances occur not just because there is strong job growth in an occupation but because that job growth exceeds the likely growth in supply. A comprehensive forecast of demand takes into account not just the

locus of economic growth and the types of jobs that will be created but also the age structure of the workforce and retirement trends in order to see how many jobs will open up because existing workers will retire.

Although no generalized shortage is anticipated in the sense of demand pressures being so strong and so widespread that inflationary pressures will start to develop, that does not mean that in some occupations, there are not any jobs without people or any people without jobs. There is simply too much flux in the economy to think that supply and demand will be in balance in every occupation. Adjustments, such as changes in relative earnings, can even out imbalances over time by influencing changes in both labour demand and labour supply, but they are slow to take place. Accordingly, our projections provide quantitative guidance about potential future pressures and imbalances at a detailed occupational level over the medium term; they do not take into consideration the mechanisms that may alleviate the gaps between demand and supply, such as changes in wages and labour market information.

It is important to note that the purpose of this outlook is not to predict employment levels with as small a margin of error as possible. All forecasts are conditional upon a set of demographic, macroeconomic, industrial and labour market assumptions, at least some of which could turn out to be erroneous. At the same time, however, the information content of the broad trends on which the assumptions are based should be of value. Updating the forecast on an annual basis also makes it possible to integrate recent developments that are pertinent to occupational projections.

Finally, this detailed 10-year outlook is presented for the national level only. At this point, only forecasts of demand by province are produced as provincial supply data are not reliable enough at the level of detail needed to carry out comprehensive projections of labour market imbalances by province.

Appendix B. Stakeholder Interview Questions

Type of Partnerships

1. Could you give examples of school/employer partnerships your organization has been involved in to support the school to work transition? These might include co-op programs, internships, mentoring, apprenticeship or pre-apprenticeship programs, career talks in the schools, etc.
2. When did these programs begin?
3. Who participates? (What age/grade levels?)

Measuring Success

4. How do you assess success of such initiatives?
5. Which programs have had good results, which ones less strong results, and what have been the reasons for success or lack of success?
6. How do you think these programs could be improved?
7. Are there any obstacles to greater use of these programs? How could they be overcome?

Communicating Employer Needs

8. How, and to whom, do you/do employers communicate the skills and knowledge you/they are looking for in the short-term and over a 2-3 year horizon?

Improving Outcomes

9. What is your advice as to how employers could better support effective school-to-work transitions?

Occupational Projections

10. Are you aware of the Canadian Occupational Projection System (COPS), operated by Human Resources and Social Development Canada that provides information on labour market projections? If so, do you use the information in COPS for labour market forecasting or human resource planning?

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