



CENTRE FOR
HUMAN
CAPITAL
POLICY

RESEARCH REPORT

SEPTEMBER 2014

Talent is not enough

.....
Closing the skills gap
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CANADA WEST FOUNDATION

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This project was made possible through the generous support of Edmonton Economic Development Corporation through a grant from Productivity Alberta. The Canada West Foundation would like to sincerely thank the participating employers and post-secondary leaders for their commitment to informed discussion. Thank you too, to the reviewers of this paper, Patti Hergott – Dean of Foundational Career and Intercultural Studies at NorQuest College and Cliff Higuchi – Vice President and General Manager at Shaw Conference Centre and others.

This report was prepared by Catherine Harder of BlueSkye Thinking Inc. and Janet Lane and Geoff Jackson of the Canada West Foundation. Any errors or omissions are the sole responsibility of the authors. The opinions expressed in this report are those of the authors and are not necessarily those of the Canada West Foundation's Board of Directors, advisers or funders. Permission to use or reproduce this report is granted for personal or classroom use without fee and without formal request, provided that it is properly cited. Copies are available for download from the Canada West Foundation website at www.cwf.ca.



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ISBN 978-1-927488-14-0

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Skills gaps are already hurting our quality of life and these gaps will widen as the economy grows and the baby boom generation retires. The problem is entirely fixable, but solutions require a commitment by all of us: individuals, educators, industry, and government.

Employers are grappling with both a shortage of skilled workers and skills gaps in the workers they employ. Within the workforce, skills gaps are evident in technical, job specific skills and in the so-called soft skills. This gap in skills has caused productivity loss and is therefore keeping some wages low, and is dimming the future for many workers who cannot keep up with the changing demands of the workplace. This case study of the relationship between three industry sectors and the post-secondary institutions in the Edmonton region examined if and how these changing needs are met.

While the technical skills demanded in occupations in the logistics, manufacturing and hospitality industries are overall being reasonably well met, there is a growing concern among employers that their employees lack adequate levels of the soft skills. These skills include, from the employer's perspective, the ability to communicate, make decisions, think critically and work in high performance teams. A framework of these skills, and others including literacy and numeracy, calls them the essential skills. (See Figure 1) They are required in every occupation to differing levels of complexity.

While the essential skills are taught at all three levels of education, the increased demand for these skills as jobs become more knowledge- and interactive-based is not yet being met by recent graduates. Workers with more experience are also faced with this increased demand for essential skills, and many of them struggle to meet it.

Preparing people to succeed in the workforce requires, among other things, a partnership between our education systems and the employers who will hire their graduates. Government plays a key role, too; they are the major funders of education systems and accredit and regulate funded programs as part of the oversight function. Traditionally employers have played a big part in the final stage of workplace preparation, but somewhat ironically while the skills gaps have been growing, in the past two decades employer investment in training has decreased 40 per cent.

FIGURE 1: THE ESSENTIAL SKILLS

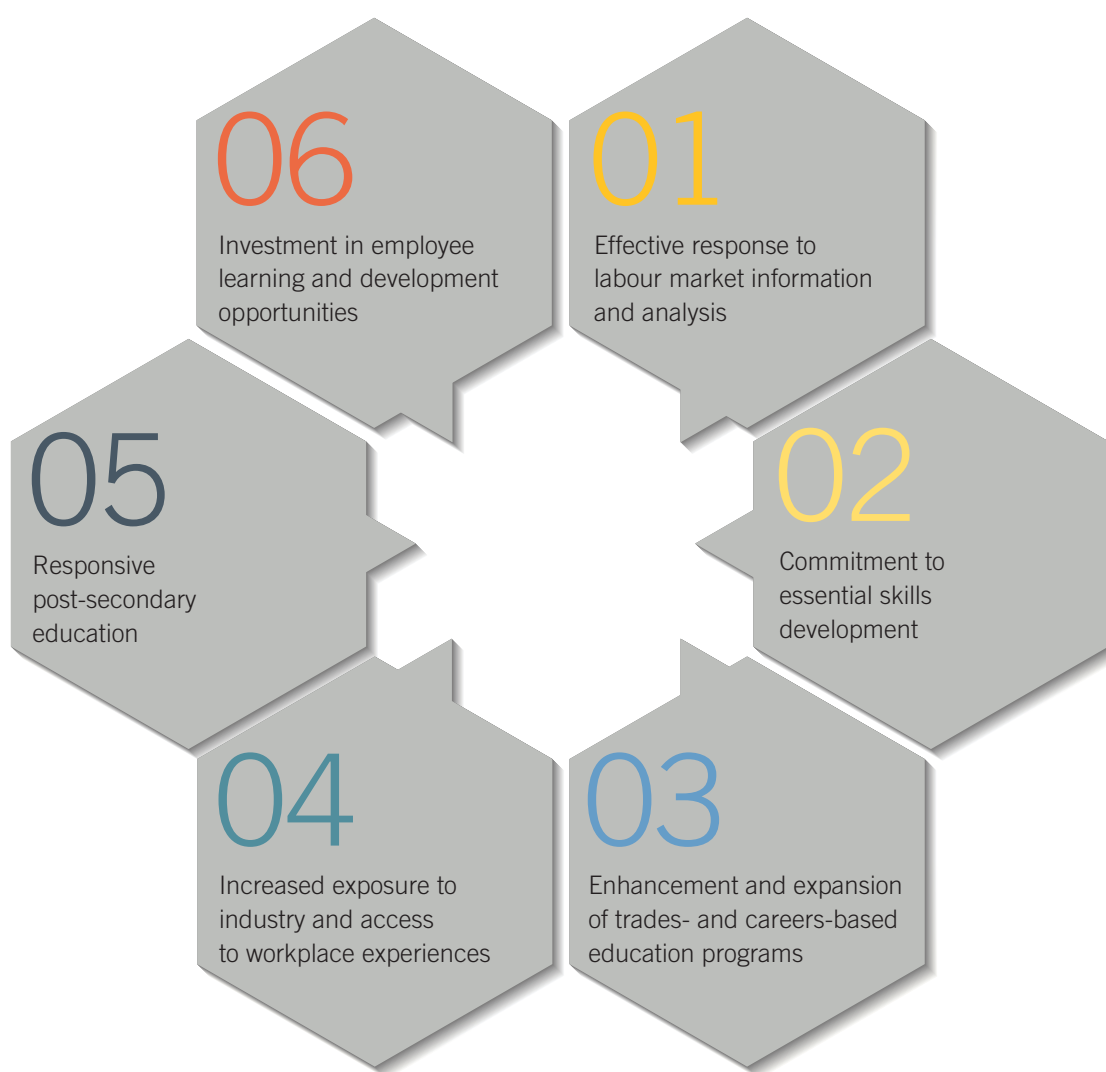
- Reading
- Oral communication
- Writing
- Numeracy
- Thinking skills
- Document use
- Computer skills
- Working with others
- Continuous learning



Six pathways, with implications for post-secondary institutions, industry and government have been devised from the research which included conversations with stakeholders in the Edmonton region. While the research was done in Edmonton, the authors believe the pathways apply across Alberta, and will be of interest to all the western provinces, and perhaps nationally. Different provinces have variations in the ways in which their education systems work, but all are experiencing gaps in essential skills throughout their workforces.

These pathways and associated recommended strategies for each stakeholder group are expanded in the final section of the paper.

The Six Pathways are:



1. BACKGROUND

The Project

The Two-Way Street project was a partnership between Edmonton Economic Development Corporation and the Canada West Foundation. It set out to investigate the processes by which post-secondary institutions in the Edmonton area work with industry to ensure graduates have the skills required for the workforce. The initial project goal was to devise strategy maps documenting the communication process by which new skills and attributes required in the workplace could be brought to the attention of the pertinent post-secondary institution(s) and then incorporated into curricula.

Once this project was underway, it became apparent that while revising post-secondary curricula may appear to be the simplest solution to the skills gap, it is only one of a set of strategies that could be considered. These findings led to the expansion of the project goal from simply defining strategies for curricula revisions to also defining additional education and training related strategies that will ensure today's workers have the skills they need to succeed in the workplace.

This report begins by providing background for the project, followed by key findings and recommendations. It concludes by proposing six strategic pathways with the potential to narrow the gap between the skills that workers are equipped with and those the labour market demands. These pathways and the strategies that inform them are intended to be catalysts for further dialogue and action to create the systemic changes needed to respond to growing labour market issues.

The Problem

Changes in the labour market and nature of work in the 21st century are outpacing changes in education and skills training. This, combined with demographic shifts, has led Canada into a skills gap. A Conference Board of Canada study released in the summer of 2013 reports that technological advances in the workplace are raising skill and knowledge requirements at a time when many Canadians are receiving insufficient or poorly matched education and skills training.¹ A November 2012 Canadian Chamber of Commerce report stated that Canada's skills challenges are the leading economic issue confronting the country, and will be for years to come.² The Conference Board of Canada reported that the rising shortfall of skilled workers and the growing mismatch between the skills required and those available has evolved into a skills crisis affecting the Canadian economy.³

Canadian employers have been vocal about these concerns. A survey released in January by the Canadian Education and Research Institute for Counselling (CERIC), found that a shortage of skilled workers is a challenge for 68 per cent of businesses across the country; 72 per cent of executives perceive a gap between the skills they are looking for and what most jobseekers have to offer. More than one in three (36 per cent) of businesses feel the gap has grown. Employers are divided evenly on responsibility for narrowing the skills gap: 43 per cent of those surveyed believe it is up to employers to provide more training, and 43 per cent believe it is up to individual workers to better prepare themselves for the workplace.⁴

¹ Daniel Munro, James Stuckey. *The Need to Make Skills Work: The Cost of Ontario's Skills Gap* (The Conference Board of Canada, June 2013) P.6

² *Closing the Skills Gap: Mapping A Path for Small Business* (Canadian Chamber of Commerce, November 14, 2012) P.7

³ Daniel Munro, James Stuckey. *The Need to Make Skills Work: The Cost of Ontario's Skills Gap* (The Conference Board of Canada, June 2013) P.11

⁴ CERIC releases Environics national survey: Canadian business divided on best way to tackle skills gap, January 2014

As concerns about the skills gap escalate, pressure has increased on businesses and post-secondary institutions to respond. The Association of Canadian Community Colleges announced in October 2013 that it is seeking closer alignment with the country's business communities and industry sector associations to curb the growth of the skills gap.⁵ The Canadian Council of Chief Executives has also acknowledged the skills gap and called for increased communication between industry and the post-secondary sector to help narrow the gap between what is taught and what is required.⁶

Canada's universities, colleges and polytechnics offer post-secondary education through systems regulated and funded by the provinces and territories. Post-secondary institutions offer a variety of programming. Most – but not all – of it is to ensure their graduates have the skills required for workplace success.

Industry is therefore a major stakeholder in the quality, types of programs, and curricula in much of the programming offered by post-secondary institutions. The quality and productivity of communication between post-secondary and industry leaders is one factor in how well graduates and learners of all types meet the requirements of the workplace and ultimately fill the skills gap.

Two-way street becomes a three-way conversation: The provincial government's role

Since the provincial government plays an important role in mandating and regulating post-secondary programs, its role must be considered when exploring how education and training should evolve to better serve the needs of industry and ultimately the economy.

The Government of Alberta funds 26 post-secondary institutions, organized into six different models. (See Figure 2)

FIGURE 2

MODEL	MANDATE
Comprehensive Academic and Research University	A comprehensive, research environment
Baccalaureate And Applied Studies University	An education oriented more directly to employment
Polytechnic	Career-based technical, technology and trades programs
Comprehensive Community Institutions (Colleges)	Preparatory, career and academic programs
Independent Academic Institutions	Faith-based education
Specialized Arts and Cultural Institutions	Fine arts and creative pursuits

Source: Canada West Foundation using Government of Alberta data.

Research was done primarily with the largest Edmonton based post-secondary institutions.

In Alberta, the Ministry of Innovation and Advanced Education is responsible for accrediting post-secondary programming. When asked to accredit a new degree program, a review of the proposed program is performed to confirm the need for the program, and how it fits with other programs offered within Alberta's post-secondary system. This is followed by a quality review by the Campus Alberta Quality Council. Proposals for certificate and diploma programs are handled differently. They are submitted through the Program Registry System, reviewed within the department and then approved by the minister. Proposed new programs or program changes are reviewed in the context of the institution's mandate statements.⁷ The Alberta government is doing a review of its accreditation program.

⁵ Association of Canadian Community Colleges National Skills Summit Summary (October 20-21, 2013)

⁶ Simon, Bernard. *Skills development in Canada: So much noise, so little action* (Canadian Council of Chief Executives, December, 2013.)

⁷ <http://eae.alberta.ca/post-secondary/credentials/approvalprocess.aspx>

The Alberta government also funds a system of community-based adult learning programs which offer basic skills including language and literacy, workplace readiness, and other interest courses in over 80 communities across the province. The language and literacy programs are intended to prepare people for entry-level jobs or for admission to post-secondary programs.

Post-secondary education

A common route to a career in Canada is to graduate high school, obtain a credential from a post-secondary institution, and then move into a job. Available credentials include degrees, diplomas, certificates, professional designations and trades certifications. However, this route is not the reality for the majority of Alberta's youth and only about one-third of Canadian youth follows it.⁸ Despite having a highly skilled workforce, Alberta has the lowest post-secondary enrolment rate in the country.⁹ This is in large part because it attracts well-educated people from across the country and around the world, and also because historically many jobs in the province have not required post-secondary credentials.

For many individuals, the road to post-secondary education is not direct, and may include more than one destination, some detours and multiple journeys. Given this context, a system that ensures workers are effectively prepared for the workplace must be multi-faceted to account for the diverse pathways workers take to get there.

Just as a linear path is not the only educational journey available in Canada, this is true in other parts of the world, as well. In Europe, most notably in Germany and Switzerland, it is common for students to develop a strong link with the business community throughout high school and continuing into post-secondary studies. Through the relationships

between post-secondary institutions and the business community, students have the opportunity to participate in apprenticeships, internships, co-op programs, and work experiences that prepare them to work in the industry sector that contributes to their training. Germany's youth unemployment rate (under 25) is 7.8 per cent¹⁰ versus 13.6 per cent¹¹ in Canada. As well as ensuring that students are workplace ready, the systems in Germany and Switzerland also contribute to lower rates of youth unemployment.

Apprenticeship programs in Canada do not have the same prestige and focus found in other countries. While industry is very involved in these programs, there are still too few employers willing to hire and train apprentices. The Alberta government realizes there is significant shortfall in the numbers of individuals in apprenticeship programs and is working towards solutions such as: allowing journeymen to have more apprentices working under them; broadening the recognition of trade credentials from other countries; and working with industry and schools to encourage awareness of the trades sector.

Essential skills

In addition to a shortage of people with in-demand technical skills, business leaders have also raised the issue of an alarming shortfall in essential skills, such as communication, reading, basic math and computer use. These and other interpersonal skills are often referred to as the "soft skills." These skills can and should be developed through primary and secondary schooling, but are increasingly requiring attention at the post-secondary level and in the workplace. The Alberta government is re-evaluating and redesigning its K-12 curriculum so that high school graduates will have a more robust education that includes the skills needed to compete in our increasingly knowledge-based economy.¹²

⁸ http://www.library.carleton.ca/sites/default/files/find/data/surveys/pdf_files/Price-of-Knowledge_4th-edition_2009-11_chapter-2_en.pdf

⁹ <http://eae.alberta.ca/media/343194/chp3.pdf> "Alberta Innovation and Advanced Education: Campus Alberta Planning Resource"

¹⁰ <http://countryeconomy.com/unemployment/germany>

¹¹ <http://www.statcan.gc.ca/daily-quotidien/140404/dq140404a-eng.htm?HPA>

¹² <http://education.alberta.ca/departement/ipr/inspiringeducation.aspx> "Alberta Education: Inspiring Education"

2. METHODOLOGY

To gain an understanding of how industry and post-secondary institutions interact, the project team performed a detailed literature review, examining Albertan, Canadian and international sources. We also reviewed German, Swiss and United Kingdom literature to explore how industry interacts with educational systems in these countries.

The Canada West Foundation, with assistance from its partner on this project, carried out a series of in-depth interviews and did a small amount of surveying with academic and industry leaders in Alberta. The project focused specifically on industry feedback in three sectors: hospitality, logistics and manufacturing.

Since the outcomes of this study are primarily informed by personal interviews, they are generally qualitative rather than quantitative in nature. Interview findings were documented, summarized and analyzed to confirm and articulate the challenges, as well as potential solutions, that are being explored. The recommendations and proposed strategic pathways integrate the ideas and solutions that were raised through the interview process. As such, they are not exhaustive, but are intended as catalysts for further exploration by parties with an interest in narrowing the skills gap.

3. FINDINGS

Skilled Worker Shortage

Feedback from both employers and post-secondary leaders indicates that the sectors under consideration in this study (hospitality, logistics and manufacturing) are experiencing a skilled worker shortage on two levels:

1. **Shortage of workers:** There are not enough workers to satisfy the demand in these sectors, specifically demand for certain types of qualified tradespeople and what are considered entry level or customer-service roles. Employers also noted a shortage of qualified managers and supervisors for core staff functions.
2. **Inadequate skills:** Those who are entering the workforce often do not come with the skills required to be successful in their roles, and the most notable gap is in soft skills or essential skills, rather than in technical skills. The most common challenges noted by employers in all three sectors are gaps in communication and interpersonal skills, as well as a lack of practical experience in the workplace.

The need for more workers

Employers and post-secondary leaders agree there is a shortage of students entering in-demand trades and technology programs, as well as careers-based education in some sectors, including hospitality. Regardless of the fact that demand, employability and compensation in the trades have been in the headlines regularly, our culture generally places higher value on university education and lower value on trades, polytechnic or careers-based education.¹³ Interviewees noted that junior and senior high school students may not be provided with enough quality information to build their awareness of diverse career and educational options. This means that fewer students consider a career in the trades as a legitimate, fulfilling (and potentially lucrative) option for their future and this contributes directly to the shortage of workers in some occupations.

In some of the high demand trades, there is no shortage of applicants. Rather, there is a significant shortage in apprenticeship program capacity and at times a shortage of apprenticeship or practicum placements available within industry. For example, the Northern Alberta Institute of Technology's (NAIT) apprenticeship programs for heavy duty mechanics and power engineers are at capacity and turn away more students than they accept each year. This case of educational supply not meeting demand is primarily linked to provincial government approvals and funding for new program seats, facilities and equipment. On the other hand, post-secondary leaders noted it is often very difficult for students to find practicum placements. This indicates that industry must recognize its vital role in training, and broaden its participation in apprenticeships as well as internships and co-op training opportunities across all sectors.

In the hospitality sector, interviewees agree the sector's poor reputation and high levels of turnover in the industry significantly increase their recruitment and retention challenges. One hotel human resources manager reported that a career in the hospitality industry (other than becoming a chef) is often considered a career of last resort rather than a career of choice for young people.

Employers in all three sectors also expressed concern that post-secondary graduates often have unrealistic expectations and a sense of entitlement. Their aspirations do not match the opportunities available to them. They may not be willing to begin in entry-level positions or they may expect immediate promotions and salary increases. The fact that these outcomes are not immediately available leads to disillusionment and contributes to high levels of turnover as employees leave one job in search of one they consider to be better.

The need for adequate skills

Employers across all three sectors generally agree that new workplace entrants have an overall deficiency in the soft skills and/or essential skills required to navigate workplace culture and perform successfully. The majority of employers specifically mentioned communication and interpersonal skills, as well as basic numeracy and computer literacy, as being generally weak. In addition, employers say new employees often lack initiative and willingness to be accountable for their actions. Employers also expressed concern about the number of graduates who have no hands-on experience in the workplace.

These challenges are exacerbated by the fact that a significant number of entry-level positions are being filled by new Canadians, many of whom have limited English-language ability and a poor understanding of Canadian workplace culture. Post-secondary leaders noted that one of the primary reasons students go on academic probation is related to challenges with language.

¹³ *Skilled Trades as Intellectual Engagement*, Education Canada, blog post. <http://www.cea-ace.ca/education-canada/article/skilled-trades-intellectual-engagement>

Hospitality:

Employers were most concerned about a significant skills gap in customer service and interpersonal skills. This includes being comfortable talking with customers, working in teams, responding to requests and troubleshooting problems. Employers also mentioned a lack of individuals with supervisory and leadership skills. Promoting and developing employees who can manage and coach others is recognized as a significant challenge in the hospitality workforce. In addition, while the issue of sustainability is front and centre within the hospitality industry, employers find that the topic is missing from the curriculum, so students are not learning about this critical theme.

Manufacturing:

Employers expressed concern about skills in measurement, estimation and mental arithmetic. Also mentioned was the need to understand business language, the importance of customers and the global economy.

Logistics:

Employers mentioned the ability to manage and complete tasks and projects as a challenge, as well as the ability to develop people adequately for management and leadership positions.

With respect to the *technical skills* of post-secondary graduates coming from specific programs, employers generally expressed satisfaction. This includes those with a university education entering salaried, administrative, management and professional positions, as well as those entering the workforce through apprenticeship programs. While most employers did not raise significant concerns with technical skills, employers in the manufacturing sector are not unified in their view. While some employers are satisfied with the technical training and preparation of engineers and technicians, others voiced concern that equipment, software and curricula being used for university and polytechnic programs are out of date and need to be refreshed to prepare graduates effectively for employers with current technology.

Training expectations and options

Most employers invest in employee training at some level, although this varies greatly across sectors and employers. Onboarding and orientation are generally provided, as is corporate training related to company-specific policies, procedures and expectations. This kind of training is generally considered very important because standards and practices vary between employers, who expect employees to implement their standards and help them deliver on their unique mission and brand promises. Some employers have more intensive training for particular positions: front of house staff in the hospitality industry; specific processes and equipment in manufacturing; defensive driving, dangerous goods and safety in logistics. This training takes place on the job, in classrooms and online.

Some employers are willing to invest in management training and leadership development and recognize this contributes positively to staff retention. Examples of this include in-house coaching and leadership training programs, as well as referring employees to relevant courses at post-secondary institutions. While most employers are willing to fund such professional development for committed employees, others expect employees to pay for it.

As noted in the Background section of this report, Canadian employers in general are divided evenly on who is responsible for narrowing the skills gap. The majority of employers across all sectors in the Edmonton area, however, expect employees to have appropriate essential skills when they are hired. They also believe it is not their responsibility to train employees in these skills, or to take on the costs of training. Some employers will recommend relevant post-secondary programs, like English for the Workplace, but will not pay for them.

While post-secondary leaders believe employers should generally take more responsibility for employee development, many employers stated they are unwilling to invest in essential skills training because of high turnover rates. If employees leave shortly after they take this training, they reason, there is minimal return on investment. Other commonly stated barriers to investing in training are inadequate funding to provide training and lack of time. In the greater Edmonton area, the pace and volume of work are fast and heavy. Taking time away from production for training beyond that which is required may not seem to make economic sense in the short term.

Paradoxically, both industry and post-secondary leaders noted that some highly successful organizations have embraced the need for essential skills training and are willing to invest in employee training, either in-house or through post-secondary programs. These companies typically hire for attitude and train for skill, an approach that often results in a competitive advantage because it significantly reduces recruitment and retention challenges, boosts customer satisfaction and makes the business more sustainable. These companies are also committed to developing a strong corporate culture that values training and mentorship. They encourage employees to set goals, and ensure they have mentors in place to support them as they upgrade their skills. While this knowledge about what great employers do is pervasive, it has not yet changed the behaviour in others. This may be the result of short-term thinking and the real and perceived limitations of operating a small business.

Employers across all sectors believe there should be more programs that are inclusive of direct workplace experiences. The majority of employers we heard from either regularly take apprentices and provide work placements or say they would be willing to do so if this was an option in their sector. (In contrast, apprentices and co-op program coordinators also report that these placements continue to be hard to find.) Examples of common apprenticeship placements are culinary (hospitality); heavy duty mechanic (logistics); and machinists (manufacturing). The potential for innovative work placements that serve both students and business was also noted. For example, one employer highlighted the opportunity to work with university interns to build the organization's sustainability plan.

Some industry associations do provide training opportunities. For example, the Alberta Hotel and Lodging Association has six training programs available to its members and these are becoming increasingly popular. In addition, the Alberta Motor Transport Association is considering creation of one-day workshops led by industry-based leaders on relevant professional development topics for truck drivers. Interviewees generally noted there is room for industry associations to play a more significant role in co-ordinating opportunities for training and development within their sectors.

The availability of sector-based training opportunities like these has the potential to greatly reduce the skills gap and the worker shortage within the sector. Employer commitment to employee training and development is critical to leveraging these opportunities, as is increasing awareness.

Industry Associations can play a valuable role

One strategy that is making a difference in Alberta's hospitality sector is the training programs offered by the Alberta Hotel and Lodging Association (AHLA). The AHLA's six workshops, developed over five years, reflect national industry standards, and have been tested and refined based on direct feedback from participants and employers. Interest and uptake of these programs are growing, indicating the workshops are meeting industry needs – in 2013 the AHLA delivered 31 workshops surpassing a goal of 20.

As well as providing relevant training for frontline staff, the AHLA workshops contribute to developing managers and supervisors. In an industry that struggles to attract and retain staff, professional training of this nature can yield an important advantage.

Courses provided by the AHLA include:

- Super Service
- Housekeeping Edge
- Front Desk Agent
- Team Excellence
- Leadership Foundations
- Training & Coaching Skills

In addition, the AHLA promotes the training and certification programs offered by the Canadian Tourism Human Resource Council (CTHRC) through its emergit-branded online training. These national programs have been developed based on industry-defined standards, and are primarily delivered in online modules. The flexible delivery enables employees to learn independently and focus on the areas where they need to improve.

Other options for training

While this study is about the relationship between industry and post-secondary institutions as they pertain to workforce preparation, some other training options and funding solutions should also be mentioned here.

The new Canada Job Grant will be funded on a shared basis by governments and employers and is designed to increase employer involvement in training employees of their choice for in-demand occupations. Accredited delivery sites, including post-secondary institutions, will provide the training.

For jobs requiring relatively low skills there are two other options that should be noted. Community Adult Learning Councils also offer basic skills programs in communities across Alberta. These programs are offered in convenient community locations and are usually relatively low cost. Employers sometimes turn to these programs for help for individual employees and occasionally will organise skills-based programs for groups of employees.

Rounding out the options for skills-based learning that leads to employment are the various programs offered with support from the Alberta and federal governments. Alberta Works centres provide job training as part of their employment services. Often this training is funded in all or part by federal funding for Employment Insurance (EI) recipients.

4. NARROWING THE GAP

Communication between industry and post-secondary institutions

Feedback from employers and post-secondary leaders indicated that the use of advisory committees for specific programs is the most common model in place to ensure ongoing communication between industry and post-secondary institutions. Many employers are willing to participate on industry advisory committees. Some already have. They view them as an important method for providing feedback and insights about skill requirements and curriculum adjustments.

There is mixed feedback on the effectiveness of advisory committees. While many employers are satisfied with the level of responsiveness and openness to change, a number noted concern over a perceived lack of responsiveness to industry feedback, and wondered whether post-secondary institutions are listening when it comes to the topics that matter most to industry.

Other ways employers connect with post-secondary institutions are participating in hiring fairs and building relationships with instructors and leaders. Employers typically direct general inquiries about the availability or potential creation of specific programs to workplace learning or contract training departments. The latter are growing in importance because they can respond quickly with customized training solutions for employers.

NAIT's industry advisory committees ensure programs stay relevant and deliver technical training that aligns with industry requirements. These committees meet regularly to discuss industry needs and program effectiveness, and make recommendations for change.

Another model is NorQuest College's more general Workforce Advisory Council, with 20 members across five sectors (Construction, Financial Services, Hospitality, Health and Manufacturing). This council directly supports NorQuest's mandate to be workplace relevant, and it has had an important impact on the creation of new programs that meet the needs of industry.

Responding to industry needs

When industry brings a skills gap or need to the attention of a post-secondary institution, there are a number of options for responding. If the need can be served through a traditional credit-based program, a new program can be created or the curriculum for an existing program can be revised.

NAIT's *Trades to Degrees* program, introduced in 2012, is an example of post-secondary institution responding to industry needs with an adjustment to a credit program. *Trades to Degrees* accepts certified tradespeople straight into the third year of NAIT's four-year bachelor of business administration program. This initiative was developed very quickly as a direct response to Alberta's workforce demand for tradespeople skilled as managers and entrepreneurs. NAIT's *Trades to Degrees* program is one of only a few such programs in North America.

Creation or revision of credit programs can be a time-consuming process in part because, as noted in the Background section, government accredits these programs. If more than five per cent of the core program is changed, approval from Alberta Innovation and Advanced Education is required; for programs below the post-secondary level eligible for Skills Investment Grant and Bursary funding (e.g. ESL, Literacy, Apprenticeship Preparation), approval from Alberta's Ministry of Human Services is also required. While changes are sometimes turned around quickly, we heard from key informants that the process is inconsistent and subject to occasional delays.

Annually, institutions can enhance initial program approvals by adding electives to core courses. Another method being used by post-secondary institutions to keep programs current is to include industry professionals as instructors or presenters for parts of the program. In general, post-secondary institutions believe they would benefit from greater industry involvement in their programs. This includes in-class presentations, as well as tours and work placements.

This study demonstrates that challenges in meeting industry needs with respect to perceived skills gaps are not primarily related to changing the curricula of existing courses, nor are they typically related to technical skills. For many of the programs discussed, students are going directly into the workforce, and if they were not adequately prepared from a technical perspective, then employers would provide this message quickly back to post-secondary institutions and changes would be made. Instead, the primary challenges in meeting industry needs appear to be happening in two other domains. The first is related to the availability and accessibility of programs. The second is related to the ability to include, or embed, training and practice of important skills into the experience of the program.

As previously noted, spaces are limited for some high-demand programs and apprenticeships. This issue exists despite the availability of labour market information that clearly predicts these shortages. In response, both post-secondary and industry leaders are looking to government for approvals and funding to make more spaces in these programs available to meet the growing demand. Industry must be ready to support these new spaces with apprenticeship placements once they become available.

As the needs of industry are changing rapidly and new skill sets are required, new job roles are being created. Significant numbers of workers require training in these new roles, often before this training even exists. Since it can be challenging and time-consuming to design and implement traditional credit-based post-secondary programs, it is becoming more common to serve emerging industry needs through the creation of non-credit programming. Non-credit programs are generally not regulated by government, although they may include preparation for certification that is regulated by industry. As a result, they are quick to set up, responsive to industry needs and can be customized for a particular employer (e.g. contract training paid for by the company) or delivered to a diverse group of learners, who may be employed or pursuing employment (e.g. continuing education typically paid for by the learners).

An example of a program like this is NorQuest's *Project Assistant* program, created specifically to meet the needs of industry where no training program existed.

Cost and awareness are both barriers to accessibility of training, according to employers and post-secondary leaders. Our research indicates that while there are training programs available to address most of the skills gaps noted by interviewees, employers are not taking advantage of available programs. In general, Canadian employers are investing less in workplace training at a time when they could play an important role in narrowing the skills gap. In some cases, this is caused by either cost or lack of awareness, but often it is because employee learning and development are not employer priorities.

While some non-credit programs are customized and paid for by employers, they are more often paid for by the learner. Consequently, cost of training can be a barrier to participation. There is limited availability of provincial student funding and in response some institutions are exploring the creation of bursaries for non-credit programs. Lack of awareness is an additional challenge, both for industry and individual learners. There is a multitude of information about training needs and opportunities available, but it is not consistently co-ordinated and the options may not be well understood.

Exploring skills-based education

Today's workplaces are inundated with ever-increasing amounts of information and data made available by technology and the Internet. This causes an increasing demand for workers who can make sense of information, think critically and make sound decisions. Post-secondary leaders suggest that to adequately prepare students for the workplace, opportunities to develop and practise these skills must be built into classroom and workplace experiences and assignments.

While universities have long been recognized as institutions of higher learning with a mandate beyond career preparation, our study encountered two institutions that are raising the bar on workplace relevance specifically related to skills development.

The Bachelor of Commerce program at MacEwan University (implemented in 2009) was designed to ensure students graduate with seven professional skills: presentation, writing, research, technology, ethics, group work and case studies (analysis and critical thinking). These skills were identified as essential for success through an environmental scan that gathered feedback from the business community before the program was created. Opportunities to learn and practise these skills are built into the courses within the program. Graduates of the program have been well received and feedback on the program has been positive overall.

The Arts Pedagogy Research & Innovation Lab (APRIL), recently founded by the University of Alberta, is undertaking innovative research that includes defining the skills that arts graduates bring to their careers, as well as investigating the additional skills that will be of most interest to employers in the future. This work is important to our study findings because it is exploring how development of particular skills can be influenced by shifting pedagogy i.e. “how we teach”, rather than by changing curriculum i.e. “what we teach”. This requires faculty openness to consider new teaching methods and processes, and is a potential barrier to the program's success. APRIL is guided by an advisory board, comprised of key leaders from industry and government. One of the key outcomes APRIL is focused on is expanding work experience participation from 30 students to 500 students (a ratio of 1:10 in the faculty).

The Faculty of Graduate Studies at the University Alberta is also exploring ways to more effectively prepare graduates for the workforce. A list-serve that has been developed for graduate students provides information on internship opportunities and professional development activities on campus. Activities range from workshops on teaching or communications to career-based programs like starting your own business or preparing for job interviews. In addition, a formal Professional Development program is in development. The vision for this program is to include relevant work experience as a requirement for graduation. The faculty is gathering input from employers in all sectors (non-profit, public and corporate) to inform the new program, which will be designed to address the “experience gap” for graduate students entering the workforce.

5. WHAT CHANGES MIGHT BE NEEDED?

Industry and post-secondary leaders believe that change is both necessary and possible to narrow the skills gap. There is strong agreement that, while the relationships between post-secondary institutions and industry in Alberta are positive on many levels, there is much that can be done to strengthen them and make them more productive. Interviewees were united in their belief that post-secondary leaders must be connected to leaders in business and industry, and that industry must recognize their role in preparing their future workforce. It was also noted that government must play an important role in both leading and supporting the required changes.

Most interviewees suggested the post-secondary system could benefit from more open and effective communication between industry and post-secondary leaders, as well as stronger links between industry associations and post-secondary institutions. More forums and opportunities for business leaders to share their challenges with post-secondary are of interest. Business leaders would like to see increased follow-up and follow-through on feedback they provide to post-secondary leaders; they would like to know their involvement is having a direct impact. It was also suggested that a lecture series from business to faculty could be of benefit because many faculty have never experienced a workplace other than their institution.

One of the most important changes industry could make is to grow awareness and understanding of the fact that people are their most important asset, and that by developing people, they are creating value, adding productivity and improving their bottom line. Industry has relationships with employees who will only be motivated to further their education and upgrade their skills when their employer puts a premium on training. Industry also has the opportunity to take the lead in developing and funding sector-driven training centres and programs in collaboration with post-secondary institutions, and ensuring post-secondary institutions have the funds, equipment and expertise available to provide the best training for what will be industry's future employees. Industry has a strong vested interest in making this happen, and therefore need to play a leadership role in these areas.

A number of interviewees suggested that Alberta could benefit significantly from a more effective apprenticeship model, similar to the European model described in the Background section of this report. The Registered Apprenticeship Program (RAP) that has been attracting high school students into the trades and the new "dual-credit" model that has recently been introduced in Alberta both reflect this approach. The basis of these models is that students begin their trades training in high school, and, while receiving high school credits, they are also able to satisfy trades requirements. These models are expected to grow in Alberta and may make an important contribution to narrowing the skills gap.

Interviewees generally agreed that students could benefit from more direct contact with industry before employment begins. For instance, supporting student memberships in industry associations would increase the number of students participating in industry events and seminars.

It was noted that since the hospitality industry hires part-time and casual staff in large numbers, students in hospitality programs should be one of their primary hiring pools. Post-secondary institutions should also create more opportunities for students to network with industry professionals, implement mentorship programs and make it mandatory for students to volunteer within industry. Industry leaders in turn need to make sure there are enough willing industry professionals engaged in these programs.

While pre-employment work experience is highly desirable, this requires a corresponding commitment from industry to host students in various types of work placements. Post-secondary leaders expressed ongoing frustration with the general shortage of industry partners willing to take on apprentices, interns and practicum students. Many programs, including apprenticeship programs, require students to find their own work placements. This results in thousands of students looking individually for placements, and businesses receiving and declining multiple requests. Ensuring sufficient work placements, especially in areas of high demand, will require a co-ordinated approach with shared accountability among industry, post-secondary and government.

An innovative secondment model that enables qualified industry professionals to engage directly with students is being tested in the U.K. In this model, professionals remain employed in their industry jobs while being seconded to teach in post-secondary programs one day each week for a minimum of one term, or a maximum of one year.¹⁴ This model may be of interest to Canadian employers and post-secondary institutions, specifically for programs where it is highly desirable for instructors to have current knowledge and practice in the field.

There has been considerable change in the organization and leadership of Alberta's education systems over the last decade, especially at the ministerial level. Bringing new leadership up to date on new initiatives under consideration takes time and considerable effort on the part of both industry and post-secondary institutions. Both groups agree that this slows down the process and hinders progress, and suggest that more consistency and longer-term relationships would be beneficial. Foresight and long-range planning based on labour market analysis are called for to ensure the right measures are being implemented and programs are being opened and expanded where necessary. Government must engage post-secondary and industry leaders effectively in these discussions. Finally, adjustments to the funding model may be required to ensure appropriate funding for programs that are critical to addressing the skills gap and the skilled worker shortage.

¹⁴ <http://centreforumblog.wordpress.com/2013/07/31/time-to-bring-industry-into-the-classroom/>

6. RECOMMENDED PATHWAYS TO SUCCESS

In *All the Workers We Need: Debunking Canada's Labour Shortage Fallacy*, author Kevin McQuillan states that there is no single solution to the serious mismatch between the skills and talents of the workforce and the demands of the labour market. He concludes: "Better preparing Canadian workers and young Canadians about to enter the labour force is essential. This is the harder part of the solution and one that will require significant efforts not only from governments and employers, but from Canadian workers as well."¹⁵

Our research draws a similar conclusion. The solution to the challenge facing Canada's labour market requires a complex set of strategies and actions. By weaving together the strategies being explored within post-secondary institutions, industry and government, and the ideas and recommendations generated by our research, we have defined six strategic pathways for narrowing the skills gap:

- Effective response to labour market information and analysis
- Commitment to essential skills development
- Enhancement and expansion of trades- and careers-based education programs
- Increased exposure to industry and access to workplace experiences
- Responsive post-secondary education
- Investment in employee learning and development opportunities

The scope of these pathways is limited to the domain of education and training, reflecting the focus of our research. Recognizing the commitment and effort that will be required from government, industry and education, each pathway identifies specific actions and outcomes required from these key players.

While the role of the learner/worker was not specifically addressed in our findings, it merits emphasis alongside the six defined pathways. To solve the issue of the skills gap, learners (who eventually become workers) must be increasingly proactive in creating and pursuing effective pathways for workplace preparation and lifelong learning (see Figure 3). Initially, this requires openness to exploring diverse career paths and opportunities, and may include participating in career information sessions, job fairs, work experience, job-shadowing and volunteer opportunities. Learners can be encouraged to choose careers in areas of high demand as well as education programs that are inclusive of workplace experiences. Finally, learners must commit to completing the training they need to succeed, both before and after entering the workforce.

FIGURE 3

The Employable Graduate Framework¹⁶

In his blog, *Running in a Forest*, Tom Staunton defines an "Employable Graduate Framework" with five competencies needed by a graduate to become employable and pursue a career:

- self aware
- learns about industry
- manages career
- communicates value
- builds experience

Such a framework provides a valuable tool for independent learners, and for educators of all stripes and guidance counsellors to use in coaching learners to prepare for the workplace.

¹⁵ <http://webapps2.ucalgary.ca/~sppweb/sites/default/files/research/mcquillan-labour-shortages-final.pdf>

¹⁶ <http://runninginaforest.wordpress.com/2013/10/30/the-employable-graduate-framework/>

Pathways to Success



Pathways to Success

STAKEHOLDER STRATEGIES FOR EACH PATHWAY

	INDUSTRY	EDUCATION SYSTEMS	GOVERNMENT
01 Effective response to labour market information and analysis	<ul style="list-style-type: none"> • Improve predictions of future worker demand and changing occupations and bring to the attention of government and post-secondary leaders • Contribute funding and expertise to programs for new and in-demand jobs. • Attract more students to in-demand jobs through enhanced marketing materials and participation in career fairs and speaking/mentoring opportunities. 	<ul style="list-style-type: none"> • Enhance opportunities for secondary and post-secondary students to learn about career paths and opportunities. • Expand programs for in-demand jobs. • Provide accurate labour market information including information about new and in-demand jobs to students. 	<ul style="list-style-type: none"> • Base long-range planning on solid labour market information and analysis. • Continue to engage industry and post-secondary leaders in discussions about labour market demands. • Increase program spaces and funding in post-secondary programs for in-demand jobs. • Consider grants or incentives for students entering programs for in-demand jobs.
02 Commitment to Essential Skills (ES) development	Consider practice of hiring for attitude and training for skill by providing: <ul style="list-style-type: none"> • Internal language and Essential Skills training for existing employees, OR • Funding for existing employees to enhance their language and ES in external programs, AND • Training as part of hiring new workers. • Adjust job descriptions and practices to ensure skills are maintained. 	K-12 and Post-Secondary systems <ul style="list-style-type: none"> • Incorporate ES competencies into all learning. • Assess ES of all graduates. • Hold selves accountable for ensuring students have the ES needed to succeed in other learning. K-12 system <ul style="list-style-type: none"> • Renew emphasis on literacy and numeracy in all curricula. 	<ul style="list-style-type: none"> • Ensure adequate funding of programs that focus on the essential skills component of career preparation. • Require ES competencies be incorporated into relevant government funded education and training programs. • Hold systems accountable for ES skills of graduates.
03 Enhancement and expansion of trades- and careers-based education programs <ul style="list-style-type: none"> • Apprenticeship • RAP & Dual-credit 	<ul style="list-style-type: none"> • Commit to regularly hiring and training apprentices. • Offer incentives for staff that are willing to work with apprentices and other learners. • Provide mentorship training for journeymen and staff. • Work with institutions to ensure education portion of training is relevant and up to date. • Commission industry associations or sector collaborations to work with institutions to guarantee and co-ordinate work placements. • Consider instituting mandatory continuing education credits for more occupations. 	<ul style="list-style-type: none"> • Provide more opportunities for students to learn about apprenticeship and the programs that are available. • Pursue additional RAP and dual credit program opportunities in collaboration with industry. • Continue to offer and expand pre-apprenticeship programs. • Work more closely with industry to make sure the skills being taught are current and relevant continuing education programs are available. 	<ul style="list-style-type: none"> • Consider expansion of the apprenticeship system to include more occupations. • Convene with industry and post-secondary leaders to develop a shared strategy for ensuring apprentices have work placements. • Ensure adequate funding of pre-apprenticeship programs, as well as trades and technology programs that are significantly more expensive to operate. • Expand seats and funding for RAP and dual-credit programs.

Pathways to Success

STAKEHOLDER STRATEGIES FOR EACH PATHWAY

	INDUSTRY	EDUCATION SYSTEMS	GOVERNMENT
04 Increased exposure to industry and access to workplace experiences	<ul style="list-style-type: none"> • Value student positions and placements as a recruitment and retention strategy. • Hire students into casual and part-time positions. • Commit to hosting students in practicum, co-op or internship opportunities. • Provide volunteers for networking and mentorship opportunities. • Reward employees that host and mentor students with financial and career incentives. • Engage students in industry associations. 	<ul style="list-style-type: none"> • Create more opportunities for students to meet and network with industry. • Consider adding work or volunteer experience as a mandatory component of High School diploma. • Implement industry mentorship programs. • Add supervised work placements as a mandatory component for more programs. • Increase focus on building relationships with industry to create a growing database of organizations willing to host students in work placements. 	<ul style="list-style-type: none"> • Ensure funding structure adequately funds programs that include supervised work placements (work placement administration adds significant costs). • Where there are work placement shortages within specific sectors, convene industry and post-secondary partners to develop a strategy and partner commitments to ensure adequate placements. • Consider grants and incentives for organizations that regularly host students for work placements.
05 Responsive post-secondary education	<ul style="list-style-type: none"> • Provide feedback about skills gaps and requirements by participating in program advisory committees and/or building relationships with instructors and leaders. • Participate as guest instructors in all levels of education; consider secondment option. • Contribute to scholarships and bursaries for low income credit and non-credit students. • Contribute funding, equipment and expertise. • Develop and fund sector-driven training centres and programs in collaboration with institutions. 	<ul style="list-style-type: none"> • Continue with program and workforce advisory committees to strengthen programs. • Enhance evaluation practices to gather feedback from industry and graduates. • Continue to revise curriculum and/or add new programs in response to industry needs. • Explore potential for seconding industry professionals into teaching opportunities. • Create new non-credit programs to provide training for emerging roles and newly identified skill-sets. • Re-design programs with a skills-based approach. 	<ul style="list-style-type: none"> • Ensure approval processes for changes and new programs are efficient and do not result in unnecessary delays. • Consider a new or transitional funding envelope for innovative program design and delivery that meets industry needs for newly identified skill-sets. • Enable low income students to apply for grants for non-credit career-based programs.
06 Investment in employee learning and development opportunities	<ul style="list-style-type: none"> • Invest in people, place an emphasis on training; make it a requirement for job advancement. • Provide funding and time for current employees to pursue education and training. • Leverage industry associations to serve as a hub for developing and delivering sector-driven training requirements. 	<ul style="list-style-type: none"> • Work with businesses and industry associations to design and deliver contract training programs that meet their needs. • Encourage students to be lifelong learners. 	<ul style="list-style-type: none"> • Provide incentives for employers that invest in training for their employees. • Continue to fund, administer, and support community-based and other programs that fill skills gaps.

