



CENTRE FOR
HUMAN
CAPITAL
POLICY

CANADA WEST FOUNDATION

JANET LANE & NAOMI CHRISTENSEN
APRIL 2015



Competence IS THE Best Credential

**TAKING
ACTION
FOR CANADA**

**JOBS AND SKILLS
FOR THE 21ST CENTURY**

CANADA WEST FOUNDATION

The Canada West Foundation focuses on the policies that shape the West's quality of life. Through our evidence-based research and commentary, we provide objective, practical solutions. For more than 40 years, we have been a passionate advocate for western Canada.

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The Centre for Human Capital Policy focuses on the economic importance of a skilled and productive workforce to Canada's current and future prosperity and supports policies that will enable western Canadians to reach their full potential.

EXECUTIVE SUMMARY

Canada has one of the best-educated, most highly credentialed workforces in the world – but that doesn't mean it is the most competent. In a world where competencies are the new credentials, Canadian workers could become even better at their jobs if we took some lessons from other jurisdictions. Slow adoption of competency frameworks is creating missed opportunities.

Competencies are job skills. They are the knowledge and practical ability required to do the tasks of a job. To be recognized as having a competency, a worker has to be assessed through observation, to a set standard, in a job setting. In many parts of the United States, throughout Europe, and in other places around the world, competencies are the currency through which employees find jobs and advance in their careers. Employers can more easily identify people with the competencies they need.

Basing training on the required competencies ensures that workers have the skills they need, when they are needed. When the competencies required for jobs have been mapped into a framework, an individual can literally build his or her career. When changing careers, those acquired competencies are transferrable, so prior learning is recognized.

In the U.S. during the 1990s, the manufacturing sector introduced competency frameworks with great success. Manufacturers in the Carolinas began devising the competencies required in their workforce. Then they invested in local residents by providing training, both in-house and through the local colleges. They found that it saved them millions of dollars over the next 20 years. One manufacturing leader of cabinetry hardware said that without the program, its production would have been lost to other countries.

In many cases, employers have taken on the responsibility of developing competencies in their workforce either in-house, through a local post-secondary institution, or

a combination of both. The U.S. Department of Labour has also embraced the concept of competencies and has developed 23 different competency frameworks for a variety of sectors.

Europe has a long history of workplace-based training. The Germanic approach is globally recognized for its workforce development of young people. In all, 20 countries in the European Union have national qualifications standards for occupational competencies, and this has enhanced labour mobility as workers can easily discover which competencies are recognized elsewhere.

Canada lags behind. A few institutions, and some industry associations, have begun to develop competency frameworks but the practice is not in wide use. The benefits of a competency framework system suggest that it should be. Regardless of the economic impact of the current oil price collapse, labour shortages will grow over time. The demographics are clear. Advances in technology will also drive constant shifts in skills demands. Employers will need their workforces to gain new skills quickly, and training to competencies is faster, easier and cheaper than 'going back to school' to earn a new credential.

Government, industry and the post-secondary system will need to work together to implement a pan-Canadian competencies approach to workforce development. Recent experience around the world, and in Canada's own Red Seal program, provide examples from which Canada can learn.

Employers will need their workforces to gain new skills quickly, and training to competencies is faster, easier and cheaper than ‘going back to school’ to earn a new credential.

TO BE SUCCESSFUL, WE MUST:



GATHER INFORMATION THROUGH PILOT PROJECTS



RESPECT PROVINCIAL JURISDICTION OVER EDUCATION AND TRAINING



HAVE PATIENCE – TAKE THE LONG-TERM VIEW



RECOGNIZE COMPETENCIES THROUGH A VARIETY OF PATHWAYS



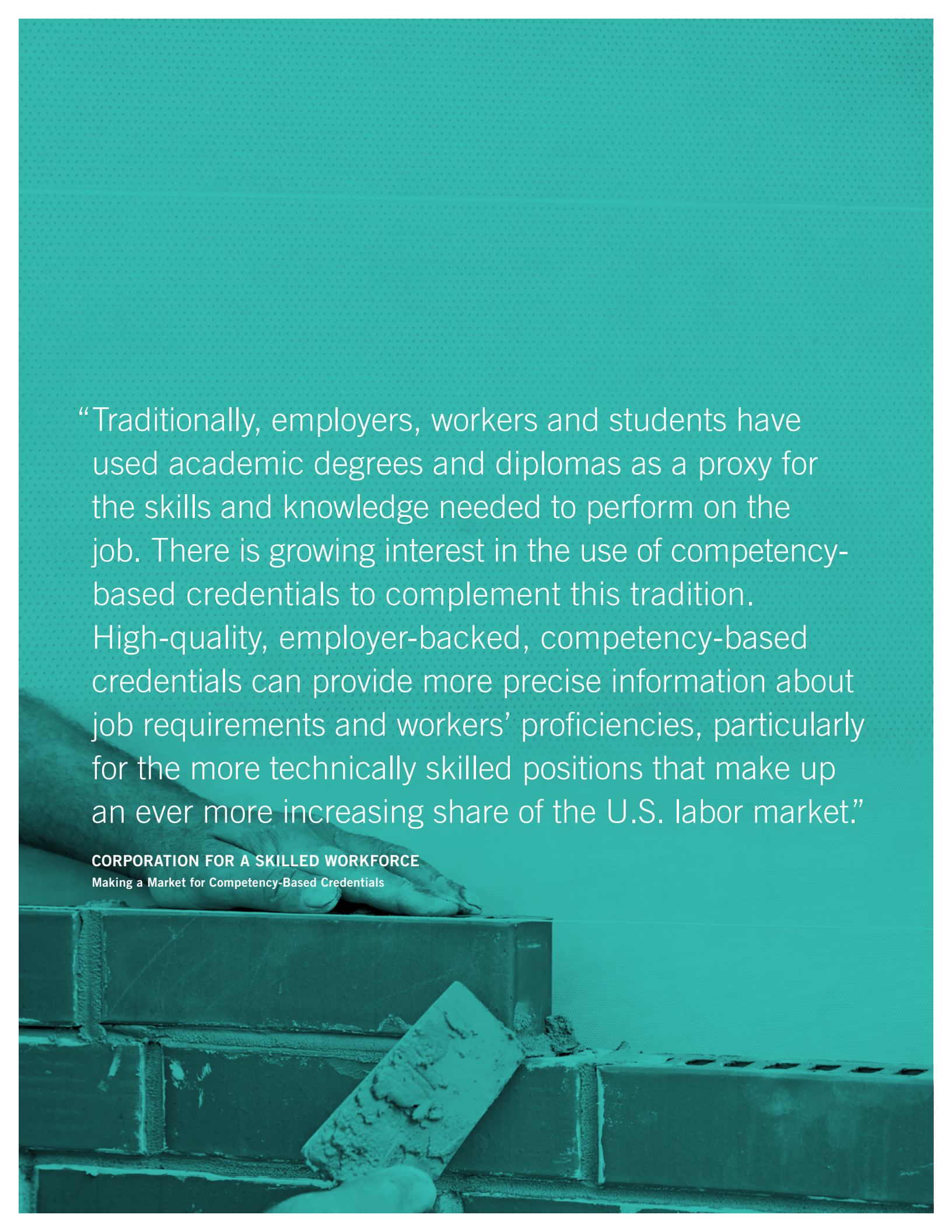
ASSESS WORKERS' PRIOR EXPERIENCE



BE AWARE OF POTENTIAL CONCERNS OF THE MAJOR STAKEHOLDERS

To sustain high wages, Canadian firms need high levels of labour productivity. Employees who are capable, i.e. have the competencies required, no matter what the type of job, are more productive. Developing, training for, and recognizing competencies are working for much of the world. Canada would do well to catch up.



A hand is shown resting on a brick wall. A trowel is visible in the foreground, resting on the bricks. The background is a solid teal color with a subtle dot pattern.

“Traditionally, employers, workers and students have used academic degrees and diplomas as a proxy for the skills and knowledge needed to perform on the job. There is growing interest in the use of competency-based credentials to complement this tradition. High-quality, employer-backed, competency-based credentials can provide more precise information about job requirements and workers’ proficiencies, particularly for the more technically skilled positions that make up an ever more increasing share of the U.S. labor market.”

CORPORATION FOR A SKILLED WORKFORCE

Making a Market for Competency-Based Credentials

INTRODUCTION

As any hiring manager knows, finding the right candidate with the right combination of skills for a particular job is a challenge. There can be hundreds of applications for every job opening and no obvious best choice. Having a strong understanding of what specific competencies are required for the job, and a way to identify the candidates who have them, would go a long way to making the recruitment process more successful and efficient.

Competent employees can do their job well. They have the full set of competencies – the skills, knowledge and attributes to perform all the tasks required by the job. Competencies are increasingly becoming recognized as what matters most to employers, more than the formal credentials a prospective employee has earned. Canadian employers have counted on credentials, in large part because they are all that have been available. Credentials show that the holder has spent time in a program and may have achieved a level of knowledge, but do not guarantee that related job skills have been developed. Post-secondary programs are not always designed to ensure that specific job skills are incorporated into the curriculum. Depending on the program, there can be gaps between the competencies a job requires and the formal training programs that are expected to develop them.

Competencies are the building blocks of every occupation, and stacking the right combination of them while on the job can make advanced positions more attainable. A road map of the competencies necessary for advancement can be created for individual employees, and with the right supports and training, advancement can become possible.

Around the world, firms, industry associations, post-secondary institutions and governments are working to create competency frameworks that itemize the specific skills, knowledge and attributes that jobs require and the ways an individual can prove they have them. Competency frameworks are helpful because they “articulate the business and industry requirements that are essential components for the development of curriculum, skill assessment instruments, and certifications.”¹

Canada lags behind. While a few firms and associations have begun this work, particularly in the mining and manufacturing sectors, overall this approach is still in its infancy compared to what has been happening in Europe. The U.S. movement has been growing steadily for the last couple of decades, but still lacks coordination because there is no national framework. Canadian stakeholders can benefit from the experience of other countries. By learning what works, and knowing what practices to avoid, a Canadian system could be the answer to our widely reported skills mismatches.

Employers need skills, not credentials

Requirements for skills in the Canadian workplace are changing. Demographic shifts, differences in the kinds of work available and changes to the way work is organized have happened faster than education and training systems can adapt. In 2013, a report prepared for the Canadian Council of Chief Executives (CCCE) noted “that without dramatic changes in skills development policies, almost 550,000 Canadian workers will not have the skills needed to fill available jobs in 2016, growing to 1.1 million in 2021.” It also forecasted that “almost 1.5 million skilled jobs will be unfilled in 2016 due to shortages of trained workers, rising to 2.6 million in 2021 and almost double that number a decade later.”² A Conference Board of Canada study released in the summer of 2013 reported 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.³ 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.⁴ The Conference Board also 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.⁵

A survey released in January 2014 by the Canadian Education and Research Institute for Counselling, 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.”⁶

A recent Canadian Council of Chief Executives survey report noted that employers expect that entry-level employees will need time to gain experience and technical knowledge, both on the job and through workplace training. However, in a highly competitive labour market, most employers are seeking out candidates who already have core competencies such as teamwork, business fundamentals, communications skills and resourcefulness. In the past many were more willing to train and mentor entry-level employees until they had the full complement of skills required.

While credentials from a formal post-secondary institution can open doors for their holders, not all credentials are the key to success in their related jobs. On-the-job experience often means more. “Because they really only measure the amount of time a student has spent in a classroom, rather than the skills a student has acquired, degrees confer little beyond the selectivity of the college that granted them.”⁷ What is needed is a combination of theoretical knowledge and practical experience. Physicians do internships, lawyers article, and engineers with a four-year degree spend at least four years working under supervision before being granted their licence to practice as a professional engineer. These professions acknowledge the need for experience as a means to translate knowledge into competencies. Workers in virtually every job require some hands-on experience to become competent in its tasks.

Post-secondary education has historically been the road to economic success, especially through the latter half of the 20th century. However, colleges and universities have evolved too little over recent years as workplace demands increase. Now, they fail at times to meet the expectations of students and employers.

“Colleges and universities, for all the benefits they bring, accomplish far less for their students than they should,” the former president of Harvard University, Derek Bok, recently lamented. Many students graduate college today, according to Bok, “without being able to write well enough to satisfy their employers ... reason clearly or perform competently in analyzing complex, non-technical problems.”⁸

In Canada, the number of people with post-secondary education grows annually. “In 2012, about 53.6% of Canadians aged 15 and over had trade certificates, college diplomas and university degrees. This was an increase of 20.9 percentage points since 1990.”⁹ There is a trend towards increasing the number of credentials; a Masters degree is now required for advancement in many occupational areas. The number of people annually awarded Master’s degrees from a Canadian university increased 65 per cent between 1998 and 2008. When job markets squeeze tighter, more people return to school in the hope of being better situated when the market eases. However, more credentials are not necessarily the answer. Being able to prove that you have the competencies required to do the jobs that are available could be a more cost effective way to achieve job market success.



Competency credentials have widespread benefits

Competency credentials can serve different purposes. Sometimes competency credentialing is used as a tool to ensure the people about to enter the workforce have the specific skills required for their chosen career. Other competency credentialing systems focus on assessing the competencies of current workers to provide a credential for the competencies and skills they already demonstrate. They can also be used to create a map of the competencies workers need to advance their careers. Stacking competencies is faster, easier, and cheaper than heading back to school for another credential. Providing credentials for the demonstration of competencies can also be part of a larger framework, like the national frameworks in place in 20 of the 28 European Union countries.

MOST JOBS ARE SUITABLE FOR COMPETENCY CREDENTIALING

While many of the first competency credentialing systems and programs were developed for technical sectors, like manufacturing, competency frameworks can be, and increasingly are being, used in a wide range of sectors.

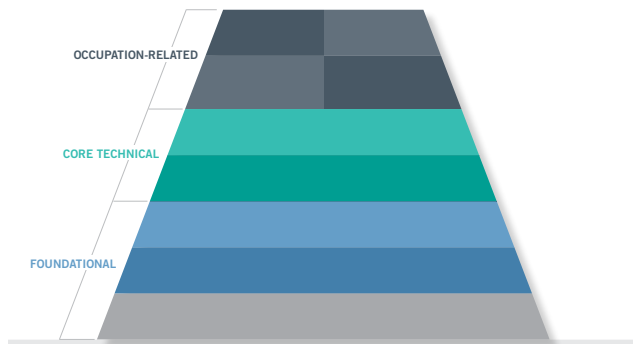
In the United Kingdom, Vocational Qualifications are earned through assessment and training in the workplace. They are available in numerous sectors, such as healthcare, retail, leisure services, hair and beauty, construction, food and catering, and management. Assessors, often in-house employees, engaged for part of their time in a related job within the firm, assess the competencies of colleagues. Verifiers, people trained specifically to ensure that the

assessors are consistently applying the national standards, regularly assess the assessors. There are 149 competency credentialing organizations in the U.K., including some well-respected global education corporations. All of these organizations adhere to strict standards for the disciplines they assess. To the outsider it seems bureaucratic and rather cumbersome, but people who know the system say it works well.

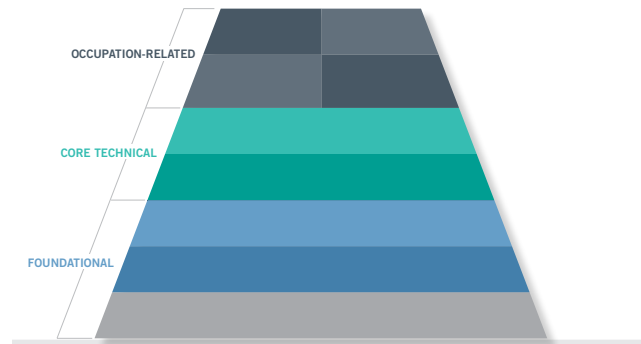
“The system works well principally because of the national standards for every occupation that have been devised by the sector skills councils. Every post-secondary institution and every in-house trainer is required to teach and assess practical work-based skills to those standards. It is expected all people who receive qualifications in any competencies are able to actually demonstrate them.”¹⁰

While it is likely there is some variation in the quality and reliability of training in this model, it is far more likely their system of both external and internal verification is better than the Canadian model, where there is no separation between instructors and assessors, and no verification at all.

Being able to list the competencies you have, and to what level – entry, supervisory, management, executive – makes finding a fit in a job easier for both employer and employee.



FOOD & BEVERAGE COMPETENCY MODEL



CYBERSECURITY COMPETENCY MODEL

▶ Occupational-Specific Requirements	Occupational-Specific Requirements
▶ Management Competencies i.e., finance, manage daily operations, leadership	Management Competencies i.e., leadership, manage daily operations
▶ Industry-Sector Technical Competencies i.e., culinary arts, service culture, beverage service	Industry-Sector Functional Areas i.e., analyze information, investigate threats, operate IT security
▶ Industry-Wide Technical Competencies i.e., service quality, food safety, marketing and branding	Industry-Wide Technical Competencies i.e., incident detection, risk management, cybersecurity technology
▶ Workplace Competencies i.e., teamwork, problem solving, working with technology	Workplace Competencies i.e., teamwork, problem solving, working with technology
▶ Academic Competencies i.e., reading, writing, math, science	Academic Competencies i.e., reading, writing, math, science
▶ Personal Effectiveness Competencies i.e., integrity, dependability, motivation	Personal Effectiveness Competencies i.e., integrity, dependability, motivation

Source: U.S. Department of Labor

In the U.S., competency frameworks have been created for a wide range of sectors and occupations. The Department of Labor is continuing to develop new models. Competency frameworks can be used in such drastically different occupations as cybersecurity, food and beverage service, and highway construction. While specific competencies will differ by sector or occupation, a similar model can be used for each, based on foundational competencies that are necessary for success in any job.

As indicated in the figures above, these foundational competencies are personal attributes, such as dependability and integrity, and essential skills like literacy, numeracy and teamwork. Adapting the model to a specific industry is done by identifying the competencies that are specific to the industry and then the competencies specific to the job profiles within the industry.

BENEFITS OF COMPETENCIES

During the hiring process, a credential for specific competencies gives an employer confidence that a candidate has the ability and skills to “hit the ground running”. From a workforce development perspective, a strong competency framework allows employers to assess performance against a well-defined set of behaviours, skills and knowledge.

Recruitment and Career Advancement

Individuals about to enter the workforce are in a much stronger position if they can prove that they have the required competencies to do the job. Learning competencies can take less time than earning a traditional credential, such as a degree or a diploma. If a learner proves they have mastered a specific task, they are promptly awarded a credential for that competency. There is no waiting until the end of a program or course of study. In fact, learning does not have to take place in a formal setting. This means that training periods can be shorter and less costly, which enables a faster entry into employment.

For mid-career workers looking to advance or change their career, prior competencies assessment gives them a clear picture of their strengths and where more training and education is necessary. This makes building a pathway to their goals much easier.

Workforce Development

Competency frameworks support firm-level workforce development policies by better linking an employee's skills and competencies to organizational performance. They help employers, particularly small and medium sized enterprises, reward and retain the right people and manage workforce and succession planning in a more objective manner.

A model like the U.K. Qualifications and Competency Framework enables employers to contribute to workforce development in a broader way than the traditional Canadian method of training of employees allows. Under the U.K. model, companies and industry associations work together to identify competencies and develop qualifications vital to their respective sectors. The government regulates each industry framework, approving qualifications and ensuring that certifications will be accepted throughout each industry – adding confidence and legitimacy to the process. As an example, McDonalds, which aims to be the U.K.'s largest trainer of apprentices, launched its own nationally recognized hospitality industry qualifications, and offers training in-house to thousands of employees every year.¹¹

Other Benefits

Industry-approved competency frameworks have the potential to save employers both time and money by taking some of the risk out of recruiting. They allow employers to choose from a pool of candidates who have independent, verified evidence that they have the skills to perform tasks required by a specific job. “[These] programs save companies money by allowing them to cherry-pick people with exactly the skills they need, rather than spending money on recruiting and training people who may not work out.”¹² Even employers who develop and run their own competency systems indicate cost savings over the long term. For example, through its *Apprenticeship 2000* program, Blum Inc., a hardware manufacturer in the U.S., hires apprentices who are for the most part straight out of high school. Blum's Apprentice Manager Andras Thurner says the long-term financial benefits from training its own workforce are substantial.

“The money saved through the skills upgrades is immeasurable. Certainly in the millions of dollars. So many things we can do in-plant now that in the past we would have to go back to a vendor or bring in a contractor... [w]ithout this program, our production would certainly have been off-shored. With the program in place we can consistently show why producing here is a better value than off-shore. That's good for the company, and it's good for the community. Everyone benefits.”¹³

Governments benefit, and should collect more revenue, when their citizens are better trained. As major subsidizers of training, governments benefit further if the training is accomplished in a shorter time and at less expense. Employers can hire the most productive workers when the potential hires have proof they meet the requirements of the job. As time goes on, more people will work to gain competency credentials so they can be more attractive to employers. As the number of people who can meet job requirements increases, employers will become more productive, the economy will grow and government will collect more revenue.

The graduates of post-secondary institutions that participate in the development and implementation of competency frameworks are more “job ready”. Criticism about the quality of graduates from these participating institutions is consequently reduced and their reputations are enhanced.

Our competitors are way ahead

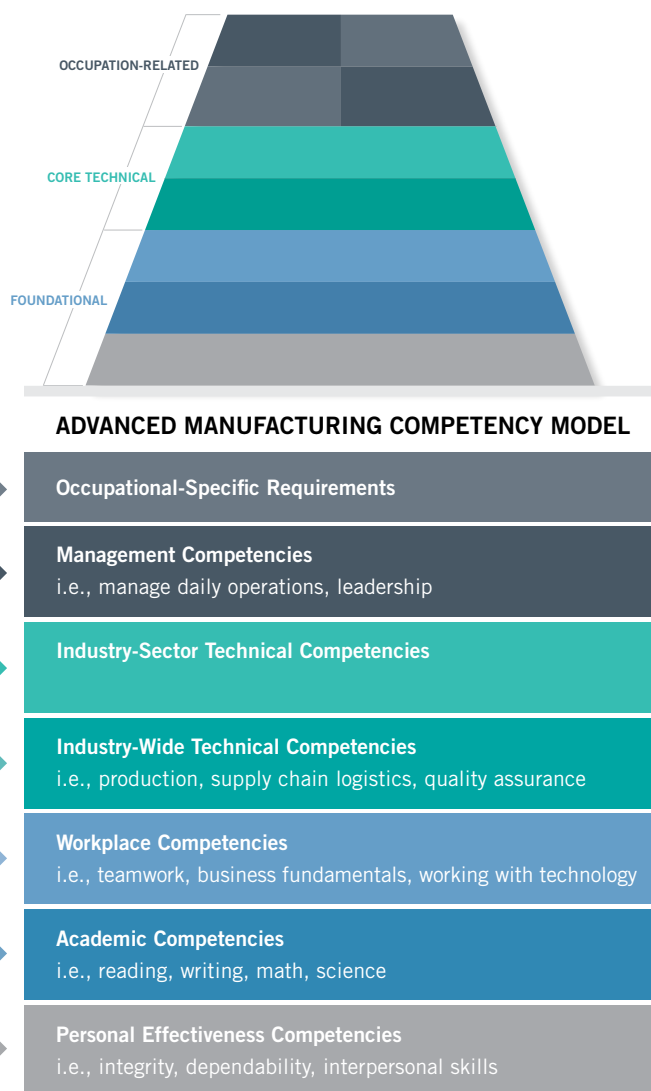
In the U.S. and Europe, employers, post-secondary institutions and government agencies are working together to create competency frameworks.

UNITED STATES

In the United States, the majority of competency frameworks are being led by industry.

In some cases, industry associations have created systems that identify, assess and certify the specific workplace competencies used in various positions within the industry. Research from The Manufacturing Institute in 2011 found 80 per cent of U.S. manufacturers could not find the skilled workers they needed. Spurred by that, the U.S. manufacturing industry created a National Skills Certification System.¹⁴ The system “standardizes the skill sets required by manufacturing into an organized system that the entire industry has agreed to recognize,”¹⁵ and is endorsed by the National Association of Manufacturers (NAM). The structure of this system can most easily be understood in the following way:

“At the bottom of the pyramid is a basic credential – the National Career Readiness Certificate [...] attesting to the core workplace skills, such as critical thinking and teamwork, that every worker is expected to have. At the top are a variety of “skills certifications,” also organized by increasing levels of knowledge that workers can earn in specific jobs such as machining, welding, construction, and automation.”¹⁶



Source: U.S. Department of Labor

Competency certification can be earned through various pathways such as traditional education, apprenticeship programs, workplace training and industry workshops. Workers already employed in the manufacturing sectors can also apply for credentials based on skills they learned (or are learning) on the job. For example, to earn the *Production Technician Certification*, you must show baseline skills in safety, quality practices and measurement, manufacturing processes and production. To obtain a *Manufacturing Technician Certification*, you must prove you have the skills needed to solve problems in multi-step processes such as computer controlled machine programming, precision measurement, machine troubleshooting and machine maintenance.¹⁷ The manufacturing industry's goal is to issue at least 500,000 certifications through the National Skills Certification System by 2016, an average of 100,000 per year.¹⁸ Manufacturing employment in the U.S. totals 12.3 million. By March 2015, 419,528 certifications had been issued, an indication that the target number of certifications could be met early.¹⁹

The manufacturing sector's National Skills Certification System shows it is possible to develop a framework that recognizes competencies by sector and job, and is accepted across geographical regions.

Technical sectors like manufacturing are not the only areas where competency frameworks can be useful. The U.S. Department of Labor has an *Industry Competency Model Initiative* working...

"... with business leaders, educators, and others to create comprehensive and readily accessible industry competency models that document the foundational and technical skills and competencies required for workplace success in economically important industries. Industry competency models provide a resource for the development of curriculum, certifications, and the tests that assess work-related competencies."²⁰

So far, 23 sector-specific models have been established, ranging from manufacturing to aerospace to retail, energy, construction, logistics and others. Four more models covering engineering, hospitality and tourism, operational security and advanced commercial buildings are being developed.

To support these efforts, the US Department of Labor (DOL) created a general competency model for employers or industries to use if they do not fall under a previously established sector-specific model. There are several similarities between the DOL model and the sector-specific frameworks, particularly at the lower levels of the pyramids. In each case, while the job may be different, the basic workplace and academic competencies required are not. As an individual progresses up the workplace ladder, the same competencies from the lower levels of the competency framework appear in their job description – it is the level to which they have competency that changes.

Some U.S. employers have discovered that they are more productive, and therefore more profitable, when they build their own workforce. In these cases, individual companies often work with a local community college to develop training focused on the skills needed for their workforce. While some of these initiatives do not fall into a competency model or framework, many are indicative of a shift towards training for specific work-related competencies to fill employer needs.

The *Apprenticeship 2000* program in North Carolina, started and financed by Blum Inc. and six other manufacturers in 1995, is an initiative that improves the capacity of the local workforce.²¹ Recruitment efforts are focused on high school students, offering them technical career opportunities and employment throughout their training and post-graduation.²² The program consists of a paid apprenticeship (6,400 hours) at one of the sponsoring companies, and classroom training (1,600 hours, working out to one day and one evening per week) at Central Piedmont Community College, a partner in the program. The training program costs an average of \$100,000 per trainee, and at completion apprentices receive an Associate of Applied Sciences degree in Mechatronics Engineering Technology.²³ The state government recognizes the program as meeting the criteria for a journeyman credential, therefore graduates also receive a Journeyman's Certification from North Carolina's Department of Commerce. Seventy-four per cent of students who enroll in *Apprenticeship 2000* complete this competencies-based program, and approximately 85 per cent of those who graduated from the program since it began 20 years ago continue to work, and advance, in the companies that trained them.²⁴

The U.S. is not a perfect model. Competency credentialing is occurring in different ways without any overarching coordination. Some industries are implementing sector specific competency frameworks. Some employer-community college partnerships are identifying and training potential employees to be proficient in specific workplace competencies, but are not necessarily working within a defined framework. That said, the degree to which workplace competencies are being identified and specifically acknowledged through credentials is far more extensive in the U.S. than in Canada. While the U.S. does not yet have a national competency framework, the federal government is quite involved in the creation of sector-specific competency models (with industry input).

EUROPE

In Europe, governments are leading the charge towards the credentialing of competence, mainly through the establishment of national frameworks. This is not surprising, given that both Europe's secondary and post-secondary systems are overall more focused on vocational training than education systems in North America.

To date, 20 of the 28 European Union countries have national frameworks in place. They consist of a number of levels corresponding to the learning outcomes (knowledge, skills and competencies) a person in that level will hold. Levels are determined by the number of credits a person obtains (based on a range of education and training), with the first levels reflecting secondary education and the highest level achieved with post-doctoral studies. There are seven categories of qualifications in the U.K.'s Qualifications and Credit Framework (QCF). The vocational skills category is most relevant to workplace competencies; it encompasses job-related qualifications...

"... designed to enable the learner to acquire knowledge and skills that are required by the national occupational standards to be able to perform a particular job. A vocational qualification gives the learner a proof that he or she is adequately trained for a particular workplace once the programme is completed, especially if holding an occupational vocational qualification. The latter guarantees that the held qualification complies to the national occupational standards for a particular job or sector such as healthcare and accounting for instance."²⁶

Vocational qualifications "distinguish themselves for giving the emphasis on knowledge and skills that are sought after the most by the industry and employers."²⁷ Starting vocational education in secondary school is a proven method of retaining students. Canada has made strides recently in this area too. Dual credit and high school enrollment in apprenticeships are gaining popularity, particularly in Western Canada.

Encompassing the individual National Qualifications Frameworks within the EU is the European Qualifications Framework (EQF), in place since April 2008.

[The EQF] "is a translation tool that helps communication and comparison between qualifications systems in Europe. Its eight common European reference levels are described in terms of learning outcomes: knowledge, skills and competencies. This allows any national qualifications systems, national qualifications frameworks (NQFs) and qualifications in Europe to relate to the EQF levels. Learners, graduates, providers and employers can use these levels to understand and compare qualifications awarded in different countries and by different education and training systems."²⁵

The European Commission's website has an interactive tool that offers the ability to select and compare different national frameworks to see how qualifications in one country would be recognized in another.

Apprenticeships

Europe is much more advanced at utilizing apprenticeships to develop job-specific competencies than Canada. In Canada, apprenticeships – and accompanying government apprenticeship grants – are available primarily for careers in construction and technical trades. And, although the in-class portion of the training is assessed through exams, there is no observation of a set of expected competencies required. It is assumed that by completing a set number of hours of work and passing a theoretical exam, an apprentice has earned the requirements of a journeyman certificate.

In Germany's dual education system,²⁸ students hired for a vocational training apprenticeship are paid by the employer, and the education component is subsidized by the federal government.²⁹ Industry groups design and administer exams for which students receive a state credential that is recognized by all employers within that particular sector. Germany's federal government recognizes 350 occupations as eligible for apprenticeships.

In the U.K., apprenticeships are available in a wide range of sectors ranging from agriculture, arts and media, business, health care, IT, education, tourism and retail, as well as construction and technical trades.

Apprenticeships in the U.K. are offered at three levels – intermediate, advanced and the recently initiated higher level. There were 440,000 apprenticeship starts in the U.K. in 2013-14, in a large and diverse variety of sectors.³⁰ Despite the longstanding history of the apprenticeship system, however, recent reports talk of an excess of paperwork, and conflicting policy changes regarding apprenticeships.³¹ The system may not be working as well as the numbers would indicate.

As the global shift towards higher levels of education progresses, university applications in the U.K. are at an all-time high. More than 512,000 applicants were placed in programs in 2014,³² despite an increase in undergraduate tuition fees in England to a maximum of £9,000 (\$17,000 Cdn) annually from just over £3,000 in 2011.³³ However, even graduation from the best universities does not guarantee easy access to the job market. To help stem the tide of university graduates without good jobs and to alleviate severe vocational skills shortages, the U.K. recently launched a new system of apprenticeship called *Higher Apprenticeships*.

“Like intermediate and advanced apprenticeships, higher apprenticeships combine on the job training while studying towards a high level qualification. Higher apprenticeships are available at a range of levels, from the equivalent of a foundation degree to a bachelor's degree and soon at master's degree level in some sectors.”³⁴

Young people can study and earn degrees while working on the job, earning income rather than being in school full-time. The U.K. government has set aside £60 million to pay for up to 20,000 young people to find higher apprenticeship placements by July 2016. Prime Minister David Cameron, facing a general election in May, has pledged his government will create another three million higher apprenticeship placements, funded through a concomitant reduction in welfare recipients, between 2015 and 2020.³⁵ This new class of apprenticeship, however, may not be reducing youth unemployment as much as it was intended. Higher apprenticeship appeals to people older than 25 a lot more than was expected.³⁶ It also appears that a lot of employers are offering zero-hour contracts to their apprentices, contracting them as apprentices, but not guaranteeing any paid hours of employment or training.³⁷

This apprenticeship system is entrenched in the U.K. and employers are willing to ‘grow their own’ in ways that Canadian employers have not yet caught onto. Barclay's Bank, determined to develop a stable workforce has recently launched its own apprenticeship system aimed at older workers. People under the age of 50 need not apply!

In the spring of 2014, Jason Kenney, then-minister of Employment and Social Development, led a group of interested executives and educators to Germany and England to study these systems. Kenny acknowledged Canada has much to learn from Germany's dual apprenticeship system, particularly in regards to the close collaboration between the education system and employers.³⁸

AUSTRALIA

Australia, a country similar to Canada in that states and territories have the main jurisdiction over education, has had a national Qualifications Framework since 1995. Like European frameworks, its qualifications framework consists of levels (a total of 10). Each level is associated with a qualification (certificate, diploma, degree), and the specific knowledge and skill set a person with that qualification will have. The education and training sectors, industry, unions, professional associations and licensing authorities help shape the qualifications and related competencies. The federal and state ministers of education, training and employment have joint responsibility for regulating the system.

CANADA

Canada has a mix of post-secondary, government and industry-led initiatives but lags behind other western jurisdictions in terms of developing and coordinating competency credential systems or frameworks. There are no nationally or provincially developed or regulated frameworks.

Post-Secondary

While most post-secondary institutions have not yet entered into the competencies discussion, some have begun to take a lead. They have shifted to focusing on teaching skills desired by employers in the workplace and assessing students based on competency rather than strictly on number of hours spent in the classroom. For example, Grant MacEwan University in Edmonton implemented a framework to measure competency skills in addition to subject matter for its undergraduate business program. It integrated an evaluation of workplace skills such as teamwork, presentation, research, case study analysis and technology skills into the marking scheme. Royal Roads University in B.C. uses outcomes-based curriculum with learning outcomes that describe the knowledge graduates will attain and the performance tasks they will be able to accomplish when they complete their program. The goal is to provide students with learning that will be transferable into real-life situations in the workplace.

While programs like the ones mentioned above may help to equip future employees with the tools they need to meet employers' needs, they are not stand-alone or additional credentials. Unless an employer knows which institutions place an emphasis on competencies, they still have no simple way of identifying how one potential employee is more job-ready than another.

Government

Red Seal Program

Canada's Red Seal Program for the trades is a made-in-Canada example of how the provinces and territories can set and certify common standards that are recognizable, and therefore transportable, across jurisdictions. The Canadian Council of Directors of Apprenticeship (CCDA), a voluntary partnership consisting of one official from each provincial and territorial government and two federal government officials (from Employment and Social Development Canada) administer the Red Seal program. Fifty-seven predominantly industrial and construction trades have been designated red seal trades, with common standards, training mechanisms and assessment. This means that while provinces and territories retain jurisdiction over trades training and certification, tradespeople who write and pass the Red Seal exam show they meet the national standards in that trade. This makes it easier to work across the country.

Not everyone in or entering these trades chooses to write the Red Seal exam. The apprenticeship council's goal is to have 65 per cent of trade certificates issued with the Red Seal endorsement by 2016; in 2011, 64 per cent of certificates issued in red seal trades had a Red Seal endorsement.³⁹ The number of Red Seals issued in 2013 (16,466) was 15.9 per cent lower than the amount issued in 2012 (19,568). This is a result of the 26 per cent decline in new registrations in red seal trades that occurred during the 2008-09 recession when employers were less willing to hire apprentices.⁴⁰ As apprenticeship programs take about five years to complete, those who entered during the recession are now completing their program. Post 2009, the number of people registering in red seal trades have been increasing.⁴¹

National Occupation Standards

The federal government's *Sectoral Initiatives Program* provides funding for partnership-based projects that develop "national occupational standards and certification/accreditation regimes, to address skills shortages in strategic sectors of Canada's economy."⁴² This funding is available for professional and business associations, sector or workplace organizations, and provincial and territorial governments. Some, like the Mining Industry Human Resources Council, are using this funding to create national occupation standards that form the basis of a coordinated national competency credentialing systems.

Provincial Initiatives

BCcampus (funded by the provincial government), developed a “Competency to Credential” (CTC) concept in 2013 aiming to better deliver and support education and training in what they identified as competency-based sectors such as the trades and health care. In 2014, it conducted a Professional Cook Pilot Project to test the implementation and tools of the CTC approach. “The current focus for work on CBE [credential-based education] at BCcampus is applying tools to support systemic use of CBE within the more traditional realms, where there already are well defined competencies outlined by the various professional associations and industries.”⁴³

INDUSTRY

Similar to what is occurring in the U.S., in Canada some individual companies and industry associations in a variety of sectors are working to enhance the workplace competencies of their employees, and certify those workers who demonstrate the skills and competencies required in specific jobs categories. Sector councils, the industry-associated organizations with a focus on human capital issues for their sector, would be ideally placed to assist in the development of these frameworks, but many do not have the financial resources to do so.

In Ontario, four⁴⁴ manufacturing organizations formed the *Ontario Manufacturing Learning Consortium (OMLC)* in an effort to address the shortage of computer numerically controlled (CNC) machinists;⁴⁵ a shortage projected to grow from 270 to 700 by 2016.⁴⁶ In 2014, OMLC launched a 26-week *CNC Machinist (Level 1) Selection and Learning Program*, partnering with employment services organizations to recruit unemployed or underemployed people aged 18-29 into the program. With three weeks of classroom training followed by 23 weeks of on-the-job employment, the program costs participating companies about \$15,000-\$20,000 per trainee, or \$1.7 million annually.⁴⁷ The Ontario government’s Youth Skills Connections Program is providing \$1.5 million in funding. This program is training and certifying new employees with the specific skills Ontario’s manufacturing sector needs its CNC machinists to have, and it is also filling a training gap, as very few post-secondary institutions offer the extremely expensive CNC machining programs.⁴⁸ OMLC’s director Rod Jones explains:

“We shouldn’t be expecting schools to buy expensive equipment like this on which students can learn. Why couldn’t we find a way to have them learn in the workplace, on the equipment they’re actually going to be seeing? From an overall societal consideration, avoiding the cost of putting expensive equipment into learning organizations seems to make sense.”⁴⁹

The Canadian Association of Oilwell Drilling Contractors began the Service Rig Competency Program in 2004 to ensure “a consistent, transferable training standard across the industry” and to create a benchmark to determine “when an employee’s experience moves beyond training and becomes competence and skill,” and to provide a nationally recognized certification to employees who pass competency assessments.⁵⁰

Siemens, Europe’s largest engineering company, developed the Siemens Mechatronic Systems Certification Program (SMSCP) to train and certify potential employees in the workplace competencies needed in three specific job profiles related to mechatronic engineering. Implemented in 2007, to date Siemens has partnerships with post-secondary institutions in Europe, North America, Asia and Africa.

Siemens is one of the best, if not the best, case studies of an industry developed competency model. A more thorough profile of the SMSCP’s development is found in Appendix 1.

(For additional examples of competency framework development in Canada see Appendix 2).

Learnings from the best competency frameworks

THERE ARE KEY COMMON ELEMENTS

Our review of existing competency credentialing frameworks revealed some basic elements that exist regardless of whether a framework was developed by government or industry, and irrespective of the sector for which the framework is used.

A competency framework has mechanisms to:

- identify needed competencies
- reliably assess the competencies people demonstrate
- train to the identified competencies, and
- award credentials accordingly

A successful system not only tailors the training of future employees towards its competencies, but it also allows for the assessment of current employees. This will allow them to gain the credentials for the competencies they can already demonstrate.

Allocation of the responsibility for a framework's components varies somewhat by country and framework.

EMPLOYERS NEED TO BE ENGAGED IN COMPETENCY DEVELOPMENT

For a competency framework or program to work, employers or industry associations must play the lead role in identifying the competencies and qualifications required within their sector. No one knows better than an employer what tasks a fully proficient employee would perform on an average day, although expertise may be needed to fully articulate the related competencies.

POST-SECONDARY INSTITUTIONS WITH A TRAINING FOCUS ARE A NATURAL PARTNER

Successful competency frameworks include post-secondary institutions. Partner institutions work with companies or industry associations by providing, and/or credentialing, formal and informal workplace training. In the U.S., industry has a strong relationship with community colleges. It has been a natural progression of the established system to move to employers working in collaboration with community colleges to ensure curricula address job specific workplace training.

GOVERNMENT HAS A ROLE TO PLAY

In various ways, government can act as a standard holder, ensuring competency credentials awarded truly reflect competence in a given sector. In the U.K., this takes the form of a regulating office specific to each jurisdiction that reviews and approves all requests for new competencies, credentials, or awarding organizations, and monitors all awarding organizations. In the U.S., where industry-college partnerships are training new hires to job specific qualifications, the government determines whether the model meets state standards and if so, issues credentials, such as trade certificates.



Next steps

Canada should develop a pan-Canadian competency framework that establishes standards of quality and practice for competency frameworks managed at the provincial level. For a pan-Canadian competency framework to be developed and implemented successfully, we need to do the following:



GATHER MORE INFORMATION

A better understanding of what developing competency frameworks for an occupation or sector costs in Canada is needed. Implementing additional pilot projects will help to determine costs, benefits, return on investment and next practices. These pilot programs could also prove the value of competencies to more industry sectors and to some economic regions. Competencies could prove to be really valuable in regions where there are shortages of skilled workers, and in regions of higher unemployment where there are large numbers of people applying for jobs they have little or no capacity to actually do. This information is needed before an efficient and effective pan-Canadian framework can be fully developed.



RESPECT PROVINCIAL JURISDICTION

Any pan-Canadian framework will need to be respectful of provincial jurisdiction over education and training. While a national framework could mean every province adheres to the same standards for every occupation, provinces and territories could maintain jurisdiction over managing competency credentialing within their borders. Models like Canada's Red Seal Program and the European Qualifications Framework

could be looked to; both enable credentials earned in one jurisdiction to transfer across borders. It is absolutely crucial to labour mobility and in the competition for global investors that standards are upheld across the country.



HAVE PATIENCE

Creating a competency credentialing system is a long-term undertaking. The benefits can be plentiful, but do not appear overnight. The research into competency identification and development of curriculum and assessment tools can take several years, especially when undertaken for an entire sector, or at a national level. It can also take multiple years for cost savings to appear. Blum's Andreas Thurner cautions that results "can't be measured in the next quarter, or even in the next year. We really didn't start to see the benefits of *[Apprenticeship 2000]* for 5 or 6 years after we started: it took that long for the new people to become part of the fabric of the company and start changing the culture."⁵¹



RECOGNIZE COMPETENCIES THROUGH A VARIETY OF PATHWAYS

Canada's education and training system may need to be re-worked to recognize that formal education is only one pathway to acquiring competencies.

In the U.S., partnerships between industry associations or specific employers and local community colleges have been very successful in the development and implementation of a competency-based approach to training and development.

Industry identifies the needed competencies and then collaborates with the college to develop the training and curriculum to be delivered. Alternatively, if they offer training in-house, they work with the college to ensure that the quality of training and assessment of the workers meets the college's standards for their credentials.

The U.K.'s Qualifications and Credit Framework "enables work-based training and learning to be recognized and formally accredited as a qualification."⁵² Through the credit framework, formal education and vocational training is not the only way to earn credits that lead to qualifications; employers can apply to the regulatory office to have their in-house training recognized as a qualification.



ASSESS PRIOR EXPERIENCE

Competencies for many jobs are gained through a combination of formal, informal, and practical learning. In a true competency-based model, it does not matter how an individual learns how to do a task – just that they can do it. To establish that there are multiple pathways to earning competency credentials, a framework must have a mechanism in place to assess competencies on site in the workplace as well as at institutions. This mechanism should encompass both the prior learning of workers who demonstrate they have the competencies necessary for their job, and the training of new hires or apprentices to develop their job or sector specific skill set. It is crucial for employers and industry stakeholders to be involved in identifying sector and job specific competencies and the most effective ways in which to assess them.



BE AWARE OF POTENTIAL CONCERNS OF THE MAJOR STAKEHOLDERS

Post-secondary institutions

While some Canadian post-secondary institutions are already working with competencies, it is inevitable that over time more will embrace this credentialing. With changing demographics and fewer working age people, skills and competencies will become even more important. Employers will need skilled workers, and may not always have the time for them to learn at today's relatively slow pace. They will need people to learn the skills they need for their first jobs, and their next ones, quickly. Training to a framework of competencies, while ensuring that the learner can do the

related jobs, takes less time than a more-rounded program of study, especially those offered by universities.

Taxpayer support of public post-secondary institutions for the last 100 years has been through grants tied to 'Carnegie units' that are based on classroom hours. The Carnegie Foundation itself has noted that the Carnegie Credit is outmoded.

"... at best, the Carnegie Unit is a crude proxy for student learning. The U.S. education system needs more informative measures of student performance. Achieving this goal would require the development of rigorous standards, assessments, and accountability systems – difficult work, especially in the field of higher education, where educational aims are highly varied and faculty autonomy is deeply engrained."⁵³

Under a competencies framework, competencies are awarded when and where the individual can prove they have them – not at the end of a period of study.

Universities have different mandates than other institutions

Universities were not designed as job market training grounds. They are meant to be, for the most part, research-based, academic learning arenas for the curious and knowledge-seeking. However, students who attend university as a means to find good jobs are beginning to demand more job preparation in their programs. Increased tuition rates need to be justified by an increased return on investment. That return is measured to some extent by the earning power of an institution's graduates. Universities especially, need to pay attention to student demands. As one writer on the need for change in post-secondary education puts it, "The key challenge is to develop a much more flexible PSE [post-secondary education] system which is much more responsive to learner needs"⁵⁴

Colleges and polytechnics, as well as some private colleges and non-profit trainers are the main employment training providers; their mandate is primarily to provide training for the workplace. Curriculum in these institutions is, to some extent, already competency related. Because of this, a shift to basing their credentials on competencies, the actual job-based skills, rather than the theoretical knowledge transferred through the time spent in the classroom, may not be as difficult – or as distasteful – as it would be for universities.

The strengths of university professors and instructors lie in their research activities, not in the assessment of competencies. However, while not normally seen as training providers, universities are, in effect, training grounds for the professions. Faculties such as business, dentistry and medicine may be able to incorporate competencies into their assessment methods more easily than other departments.

Sharing the right to credential

Traditionally, in Canada, post-secondary institutions, through regulations upheld by their provincial governments, have been the major credential granting bodies. Credentials have been granted after certain residency requirements, and successful completion of the required number of credits have been achieved. On the other hand, competencies are assessed through demonstration and observation. Theoretical knowledge that is required for high-level competencies must be also be demonstrated in the workplace. A shift to frameworks of stackable competencies, (higher skills built upon lower level skills) as determined by industry, will require institutions to be partners in credentialing with other industry-based assessment bodies.

Separation of assessment from instruction

As well as empowering other bodies to be part of the credentialing system, successful implementation of competency credentials requires assessment to be separate from instruction. There is an inherent conflict of interest when instructors assess the competencies of the individuals they have taught. While education in Europe and the U.K. has traditionally had this separation, it is not the norm in Canada. One Canadian consultant who has begun to do extensive work regarding industry led competency frameworks suggests:

“[u]nless we make some fundamental changes in our paradigms for higher education, Canada is going to fall further behind in growing the skills the economy needs. Unfortunately, that probably means relying on people with a vested interest in the status quo to make those changes, and I’m not optimistic that they have the vision or the courage to do it.”⁵⁵

Separating assessment from instruction makes the instructor more accountable. While some instructors would welcome more accountability, others might find it uncomfortable and restrictive. A British expert on competencies and certified assessor of a multitude of competencies who has worked extensively with large corporations in Europe, the U.K. and recently Canada says:

“The challenge facing Canada is to allow recognition and accreditation of competencies that stand across the provinces and territories, while preserving college and university independence and existence.... I believe this can be done easier than academia or the government is prepared to acknowledge due to protectionism and fear of change.

This change would increase everyone’s income (in fact I am sure it would increase academic income and profit) and allow freedom of movement of the workforce that would significantly impact on social mobility in Canada and its ability to perform in a global market.”⁵⁶

INDUSTRY

Industry expectations

In Canada, the CERIC study showed that 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.⁵⁷ Some Canadian employers understand that the benefits of providing workplace training can outweigh the costs, both in financial terms and in lost productivity; others have not yet reached this understanding. Even for employers who would like to do more workplace training, sometimes there are barriers.

Industry champions, who will attest to the value of competencies and the benefits of instituting frameworks, despite the costs and level of commitment demanded, are needed.

Industry experience

For employers who have been involved in workplace training, beyond that which is required for safety and orientation purposes, results have likely been hit and miss. Training of all kinds is offered by a variety of providers, some with few qualifications to do the instruction, sometimes at great expense, and often without any long-term benefit. The biggest reason for poor results is likely the lack of proper needs assessments in the first place. It is tempting to choose a packaged training program that purports to meet needs, but then they often fail. Another reason that workplace learning can fail to bring the desired results is too few opportunities to practice. Skills that are underutilized deteriorate over time. Competency-based learning and assessment are solutions to these issues.

Any change in development of curricula, delivery of workplace learning, and creation of assessment tools will need to be managed appropriately by certified professionals. It will take time to train Canadian experts in this field, but the training will be crucial to success. Further poor experiences would likely cause employers to withdraw their support for competency frameworks quickly.

Industry capacity

The vast majority of Canada's private sector workforce is employed by small (70 per cent) or medium (20 per cent) sized enterprises (SMEs). Thirty-seven per cent of people in the private sector are employed by companies that employ less than 20 people.⁵⁸ In the U.K., in contrast, less than half (48 per cent) of the private sector workforce is employed by SMEs.⁵⁹ In addition, the U.K. government subsidizes workplace training and assessment through a dedicated skills funding agency, making training easier and less costly for employers.

For Canadian SMEs, instituting in-house training and assessment might appear at first glance like too much work, and be too expensive. They will likely need some incentive and support in order to move to a competency model. For these employers, their industry associations, and where available, their sector councils, could offer valuable leadership and support.

GOVERNMENT

As systems of competency frameworks may become self-sustaining through their related industry associations, government support to the development and implementation of the frameworks might only need to be short-term. Some initial support, at least, will be necessary for success.

Employers and industry associations in the U.S. have identified needed competencies. In Canada, some larger sectors have undertaken the work, and found it paid for itself, once established. For smaller sectors, or those without associations, assistance from government during this stage may be necessary.

Building a workforce with the capacity to reliably train towards competencies and assess the competencies people demonstrate, will take time and energy. Support to the training bodies may be needed until there are enough people in the field available to form their own organizations, collect membership dues, and then offer training for the next cohorts of trainers and assessors.

Time and effort must also be spent on creating assessment tools. As the lower level competencies are fundamentally the same, even though they may look different in each job, government support for the development of these tools could efficiently ensure that basic standards are met.

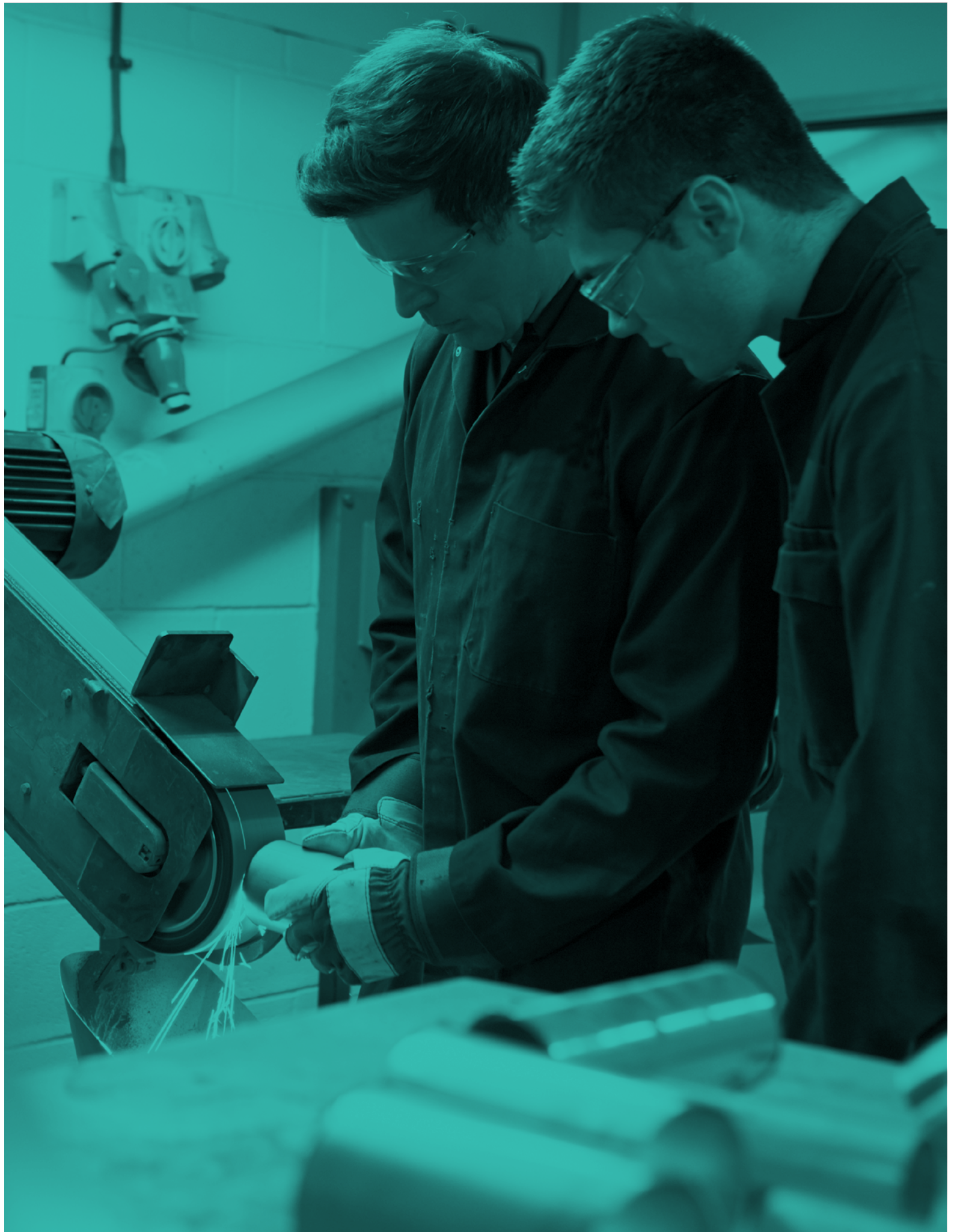
Competency credentialing bodies, like the ones in the U.K., do not exist in Canada. However, professional associations and sector councils, as well as industry associations do. These organizations could become our credentialing bodies for competencies, but need to be held to exact standards. It may be best for governments across Canada to be the standard holders, ensuring that a competency in Yukon means the same as in Nova Scotia. Provinces should work towards pan-Canadian frameworks of competencies.

Some people might argue for a national competency framework. Experience with the Council of the Federation, Council of Ministers of Education, and the Red Seal program as outlined earlier in the paper, shows that we can move quickly, efficiently and effectively when the provinces lead the way.

Another key role for provinces is to strengthen competency assessment in the existing primary, secondary and tertiary education systems, so less needs to be layered on after formal education. This will also increase the value to young people for the time and money they are already committing to formal education.

Huge value can be created for employers, employees and ultimately the economy through a shift to competencies. Government involvement in the process may mean a shift in support from the old system to a new one. The timing and extent of that shift will be a political decision, and should not be taken lightly. There will still be a need for the credentialing system in place now.

The federal government has supported the development of competencies through its *Sectoral Initiatives Program*. Continued support of this program will encourage more industry sectors to enter into the competency discussion. Eventually, government, industry and post-secondary institutions can unleash greater potential in the Canadian workforce.



APPENDIX 1

CASE STUDY 1

SIEMENS MECHATRONIC SYSTEMS CERTIFICATION PROGRAM (SMSCP) – A GLOBAL COMPETENCY CREDENTIAL

Siemens began working on a certification program for mechatronic engineering in 2004.⁶⁰ After three years of development, Siemens launched the program in both China and Kentucky in 2007, in partnership with Amatrol.⁶¹ SMSCP is made up of three levels, each corresponding to a job profile based on “a comprehensive description of the tasks that the certified individual should be able to perform.”⁶² The three job profiles that can be obtained through the program are: Siemens Certified Mechatronic Systems Assistant (Level 1), Siemens Certified Mechatronic Systems Associate (Level 2), or Siemens Certified Mechatronic Systems Professional (Level 3). These certifications can be stacked but also stand alone; a student does *not* need certification in a lower Level before advancing to take a higher Level certification. The SMSCP certification is recognized internationally.

Creation of SMSCP

Siemens saw the increased use of mechatronic technology across various industries as creating the need for a mechatronic systems certification that would incorporate international industry standards. It created the SMSCP to provide this training, with “an emphasis on in-demand industrial skills, troubleshooting, and hands-on practice.”⁶³

Development of SMSCP

The Mechatronic Systems Certification was developed by the Siemens Technik Akademie Berline, a government-recognized vocational college in Germany. According to Siemens, “each job profile is the result of approximately one year of research and synthesis to formulate a description of what the Certified Assistants, Associates and Professionals should be able to do after having passed their certification exam. The Job Profiles were developed based on input from Siemens factory heads and human resource directors from around the world, as well as together with government workforce qualification authorities in several countries.” SMSCP is based on Siemens’s system-wide teaching approach it uses to train employees. This means that students first learn how the system functions at the macro level, before studying the components of the mechanical, electrical and controller subsystems. Siemens was also responsible for developing the exams SMSCP students must pass to receive SMSCP certification.

Partnerships

To administer SMSCP, Siemens partners with post-secondary institutions in Europe as well as Asia, Africa, and North America. Only institutions that are certified as Siemens Partner Schools can teach and certify the SMSCP. To date, 13 institutions in the United States are certified to provide the program.

SMSCP in Canada

In 2014, Siemens Canada signed educational collaboration Memorandums of Understanding (MOUs) with five post-secondary institutions in Canada; the agreement includes the provision of the SMSCP.⁶⁴ In February 2015, Siemens signed two additional MOUs with Seneca College and Sheridan College in Ontario. These colleges will now be able to set up certificate programs focusing on mechatronics instruction, and graduates will be able to write the SMSCP certification exam.

CASE STUDY 2

CANADIAN MINING CERTIFICATION PROGRAM

What is the CMCP?

The Canadian Mining Certification Program has been active since February 2011. The Mining Industry Human Resources Council (MiHR) began working on it in 2005, collaborating with mining industry members (employers, employees, associations, educators) to develop a program to “recognize and certify the skills and competencies of workers in undesignated occupations in the mining industry.”⁶⁵ The driving force behind creating this certification system was twofold. First, as a response to MiHR’s research indicating turnover rates “in unrecognized occupations is twice as high when compared to all other occupations in mining and two of the most important reasons for people leaving the industry are a lack of training and development and lack of career opportunities.”⁶⁶ Second, to counter a looming skills shortage (as the current, aging workforce retires) by attracting and retaining skilled workers with the ability to obtain a nationally recognized credential (similar to what workers can achieve in the trades). MiHR created the structure for the CMCP in 2008 and piloted it at seven mine sites in 2011 before making it available nationally.

Endorsed by the Mining Association of Canada, the goals of CMCP are to:⁶⁷

- enable employers to accurately and consistently verify the skills and experience of job applicants,
- align company training programs to the national standard, reducing duplication and making best use of training dollars,

- support ongoing professional development and continuous learning opportunities for their employees, and
- recognize the skills, knowledge and experience of mining workers.

CMCP Framework & Certification Process

The CMCP uses the skills and competency standards for mining occupations identified in Canada’s National Occupational Standards (NOS). Where NOS do not exist, MiHR is involved in bringing together industry members to establish and pilot them. CMCP is not a training program; rather it assesses the competencies workers have gained through their work experience in the mining sector and recognizes them with a national certificate. (Some employers choose to tailor their employee training to the NOS so new employees will be able to obtain the certification).

To be eligible for certification, an employee’s company or site must be CMCP-designated (currently 17 companies (19 sites) are designated), and their job must have an established NOS. So far, certification is available for four occupations – Underground Miners, Surface Miners, Minerals Processing Operators and Diamond Drillers. NOS are currently being developed for industry trainers, frontline supervisors, and hoist operators. MiHR hopes to eventually have NOS and related certification for all mining occupations.

The time required for the certification process depends on the occupation. To obtain certification, an employee must have a minimum number of hours of work (dependant on the occupation), meet all NOS requirements, and pass a workplace assessment that determines the skills and competencies of the employee while they are performing the tasks of their job. MiHR maintains a CMCP registry, and issues a certificate and skills passport to certified employees as proof that they meet the required competencies in their occupation.

As of October 30, 2014, CMCP had certified 956 mining employees.

CMCP is partly funded by Employment and Social Development Canada’s *Sectoral Initiative Program*. This funding, as well as contributions from industry members, covers the cost of developing and piloting occupational standards. The \$250 fee required to take the certification assessment (which can be paid by either the employee or employer) pays for the general maintenance of the program.

APPENDIX 2

ADDITIONAL CANADIAN COMPETENCY EXAMPLES

The Canadian Construction Association created a Gold Seal Certification for construction managers (in place since 1991) as an industry-wide credential to signify expertise in construction management, signalling to contractors that managers with the Gold Seal meet certain requirements in experience, education, skill, and knowledge of best practices.

Engineers Canada, the national organization made up of the provincial and territorial organizations that regulate and license engineers in Canada, conducted a pilot project of a competency-based assessment system in Saskatchewan and Ontario in 2012. While the aim of this project was to identify how to better assess the work experience of international engineer graduates seeking a licence to practice in Canada, the project identified seven core engineering competencies, examples of what achievement of those competencies looks like, and established an assessment process. Engineers Canada plans to develop an online tool to facilitate the use of these competencies for the provincial and territorial regulating bodies.

The Canadian Tourism Human Resource Council researches and designs *emerit* training for tourism and hospitality occupations, by providing online modules and traditional workbooks focused on skills needed in the workplace (based on National Occupational Standards). The *emerit* certifications are a nationally recognized credential. *Emerit* training programs are eligible for funding under the *Canada Job Grant*.

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