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Bridging the Divide, Part I: What Canadian Job Ads Said

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Executive Summary

Discussions of Canada's so-called 'skills gap' have reached a fever pitch. Driven by conflicting reports and data, the conversation shows no signs of abating. On the one hand, economic indicators commonly used to identify gaps point to problems limited to only certain occupations (like health occupations) and certain provinces (like Alberta) rather than to a general skills crisis. On the other hand, employers continue to report a mismatch between the skills they need in their workplaces and those possessed by job seekers, and to voice concern that the postsecondary system is not graduating students with the skills they need.

For some employers and commentators, the skills gap problem is one involving too few highly skilled workers in the Canadian labour market. For others, it is a problem related to weak essential skills, such as working with others, oral communication and problem solving. Still others use the term "skills gap" to refer to what might better be described as an "experience gap" – a shortage of "work-ready" employees possessing those skills that employers claim can only be acquired through work experience. To address the conflicting views on Canada's skills gap and to argue that a better understanding of Canada's skills problem is hindered by disagreement over what actually constitutes a skills gap, HEQCO recently published *The Great Skills Divide: A Review of the Literature*.

To further explore the skills gap issue, HEQCO also published a two-part analysis of Canadian job advertisements. The current report, *Bridging the Gap, Part I: What Canadian Job Ads Said*, examines the skills employers say they need and how they communicate this need to prospective employees. Through a content analysis of 316 Canadian job advertisements for entry-level positions geared toward postsecondary graduates, this study considers what employers look for in recent postsecondary graduates in terms of credentials, essential skills and work experience. The follow-up report, *Bridging the Gap, Part II: What Canadian Job Ads Produced,* examines survey responses from employers who posted the job advertisements included in the preceding study to explore in detail the outcome of the hiring process (e.g., Was someone hired? What were his or her qualifications? Is the employer satisfied?).

The current report revealed that most employers look for employees with substantial prior experience, even for positions that were advertised as entry-level. Less than one-quarter (24%) of all employers would accept no work experience as a minimum requirement. On average, employers asked for a minimum of 1.4 years and a maximum of 2 years of work experience for entry-level positions, suggesting that the skills gap problem may be as much about experience as skills.

Of the essential skills favoured by employers, we found that employers most clearly and commonly valued employees who could work well with others, who had effective oral communication skills and strong computer skills. And while all employers in our sample requested some form of postsecondary education, almost half of employers (47%) were indifferent as to whether candidates received this credential from a college or university. Finally, the study found that in almost three-quarters of job postings examined, stated educational requirements were aligned with those of Employment and Social Development Canada, which classifies occupations by skill type and educational attainment.

These findings raise important questions for both employers and postsecondary institutions. Do employers prefer job candidates with work experience because they find recent graduates from postsecondary institutions to be ill-prepared for the labour market? Or are employers shirking their responsibilities to train new employees? More broadly, what skills should postsecondary institutions be teaching and what skills should properly be learned through on-the-job training? Answers to these questions will provide new opportunities for groups both on the demand (employers) and supply (postsecondary) sides of the skills gap debate to strengthen alignment between the postsecondary sector and the Canadian labour market.

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Introduction

Canada's "skills gap" has come to dominate both headlines and policy debates. Employers and business representatives report a growing mismatch between the skills they need in employees and those possessed by job seekers. These concerns have fostered suggestions that the postsecondary system is not graduating students with the skills required by the labour market.

But not everyone is convinced. A growing chorus of voices questions whether or not such a gap actually exists in the Canadian economy. Nor is it clear when the skills gap is discussed that commentators have the same phenomenon in mind. Some consider the skills gap problem to result from a lack of postsecondary graduates to meet the impending demand for high-skilled workers, while others see it as a problem of students graduating with the wrong credentials for the labour market. Some suggest that Canadian students have the right credentials, but not the basic essential skills needed by employers. Still others suggest that students have the right skills, but lack the work experience employers demand.

In *The Great Skills Divide: A Review of the Literature*, HEQCO addresses the conflicting views on Canada's skills gap by examining who is saying what and why. Taking a cue from Tyler Meredith's (2014) comment that Canada needs to "refine data collection to better reflect what is happening down below the 35,000 foot altitude perspective of the national labour market" (p. 65), HEQCO adds to the skills gap discussion in the current report through a content analysis of 316 Canadian job advertisements for entry-level positions for postsecondary graduates. The purpose of this analysis is to better understand what skills employers are actually looking for (and saying they cannot find) and how they are articulating their demand for these skills. In doing so, we hope to provide greater clarity to job seekers and employers navigating the job market, to postsecondary institutions tasked with developing Canada's skilled workforce and to policymakers working to ensure that labour markets operate as efficiently as possible.

Aims of this Study

What is striking about the discussion on skills gaps in Canada is that is contains so little agreement as to the extent – or even existence – of such a gap. This should perhaps not be surprising, given the notorious difficulties of both analyzing and predicting labour market behaviour.

The author of this paper is not an economist and so will spare you any attempt at labour market forecasting. Instead, this study aims to add to the skills gap discussion through a content analysis of job advertisements geared toward new postsecondary education (PSE) graduates seeking entry-level positions. Currently, most of our knowledge on skills shortages in Canada comes from employer surveys. This is problematic because employer surveys do not always tell the whole story. Employers may *say* one thing but *do* another, a contrast that can be captured in part by how they advertise the positions they seek to fill.

Canada's perceived skills gap has yet to be investigated through the lens of job advertisements. Carnevale, Jayasundera and Repnikov (2014) recently completed work using online job advertisements to look at the U.S. job market for college graduates, but their analysis was done on a macro level, drawing out broad labour market trends from a sample of almost 2 million job postings. Our research is different both because it examines the Canadian context and, more significantly, because it takes a micro approach to examining job advertisements. We are interested less in general labour market trends and more in the ways in which individual employers approach the recruitment process – what skills and qualities they look for and how they articulate their demand for these attributes in job advertisements.

Job advertisements are a valuable methodological tool in the skills gap debate because they are often the first point of contact with labour markets for job candidates. If the skills listed in the job advertisement do not match a candidate's own self-assessed skill set, they may not apply for that position despite actually being qualified.

An overarching goal of this study is to encourage and strengthen alignment between the PSE and employer sectors. Employer surveys and much of the recent literature on skills gaps adopt the perspective of groups on the demand side of the labour market. Conversely, HEQCO is interested in the supply side, tasked with supporting the postsecondary system that supplies the economy with recent graduates. Unfortunately, there is a tendency for these two sides to operate independently of one another. By looking at job advertisements geared toward new PSE graduates, we examine the demand side from the perspective of the supply side.

Keeping HEQCO's mandate in mind, the following research questions guided this study:

1. What skills are employers seeking across occupations for recent graduates in entry-level positions?
2. What can the PSE sector learn from job advertisements to help it better support its students as they transition into the labour market?

Methodology and Data

Sample

The sample of job advertisements used in this study was collected in the week of January 20, 2014. A total of 316 job advertisements were collected, representing the greatest number of advertisements that could be accessed in our time period.

As mentioned, the goal of this study was to look at the jobs available to recent postsecondary graduates seeking their first (entry-level) job out of PSE. To be included in our sample, a job advertisement thus had to meet the following criteria:

1. It had to require that the applicant have completed some form of PSE.
2. It had to state explicitly that the position was entry-level.

There are three major job search engines that allow for job seekers to search specifically for 'entry-level' positions. As such, these three search engines were used. These search engines are:

1. Monster Canada: http://www.monster.ca
2. Workopolis: http://www.workopolis.com
3. Charity Village: http://www.charityvillage.com

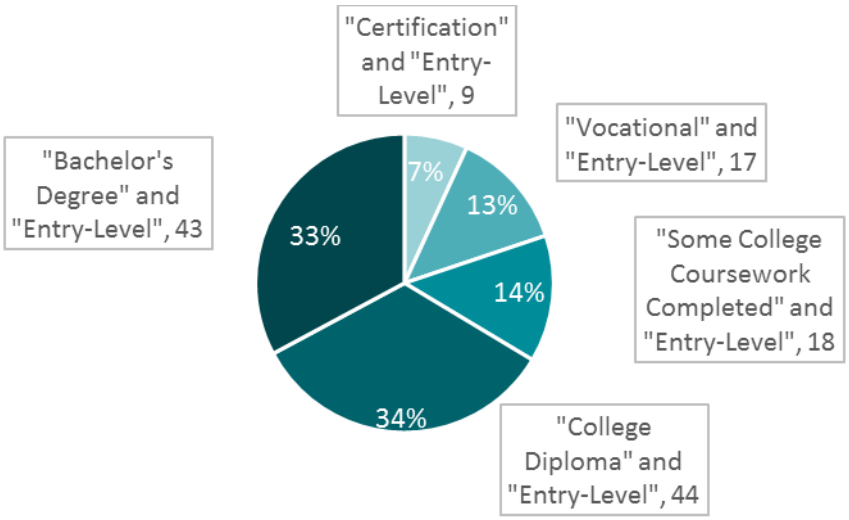
The section that follows will discuss briefly how jobs were collected from each of the three search engines in order to accommodate the minor differences in search categories available for each engine.

Collecting Job Advertisements on Monster Canada

To find advertisements for entry-level jobs requiring PSE, Monster Canada's advanced search function was used. This function allows the user to search by multiple terms at once and returns only jobs that match all selected criteria. For all searches, the "entry-level" classification was selected from a drop-down menu that

lets the user specify “career level.” Monster Canada also has a drop-down menu that lets the user select an “education level.” This study is concerned with PSE graduates entering the labour market, so the cross-selections in Figure 1 were searched.

Figure 1: Job Advertisements Sampled from Monster Canada, by Education Level



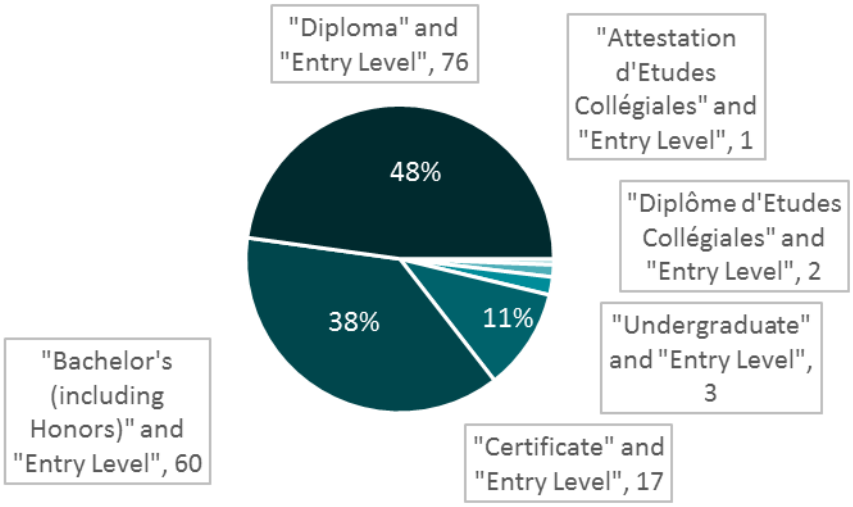
For each cross-selection of keywords, all jobs returned by the search engine at that point in time in January were collected as PDF screen shots. No further job advertisements were collected from Monster Canada subsequent to this point. In total, 131 job advertisements were collected using Monster Canada.

By collecting these educational level categories, the aim was to capture all jobs on the search engine that were open to students seeking entry-level jobs out of PSE. The decision was made to exclude graduate degrees and professional programs, as these degrees tend to be more specialized and it was determined that search engines are not the primary means through which labour market entrants with these credentials find positions. This was reflected by the fact that these search categories returned few if any job positions.

Collecting Job Advertisements on Workopolis

The same approach was used for the Workopolis search engine. Using the advanced search function again, “entry-level” was selected for “career level.” Workopolis has a slightly different list of educational categories, from which the cross-selections in Figure 2 were searched:

Figure 2: Job Advertisements Sampled from Workopolis, by Education Level



As with the Monster Canada search, all jobs returned under these cross-selections were collected. In total, 159 job advertisements were collected using Workopolis.

Collecting Job Advertisements on Charity Village

Job advertisements from Charity Village were collected slightly differently because its advanced search function allows the user to search by career level (e.g., entry-level) but not by education level. Instead, while "entry-level" was again selected for career level, once the search engine had returned its listings for entry-level jobs, education level was then assessed manually. Any job requesting any level of PSE (except for a graduate or professional degree) was retained. Several jobs that "preferred" but did not require PSE were also included.

In total, 26 job advertisements were collected using Charity Village.

Other Criteria for Inclusion/Exclusion of Job Advertisements in the Sample

Once all job advertisements had been collected based on the above criteria, jobs were also included/excluded on the following basis:

- Only jobs written in English were included (this included bilingual advertisements)
- Only jobs for which the position was based in Canada were included
- Duplicate advertisements were eliminated
- Only paid full-time jobs were collected
- Jobs listed by recruiters that did not list a business name were not included. These job ads were excluded because they often lacked information, such as industry type, necessary to our analyses.

Coding and Content Analysis

Upon collection of our sample, a team of three coders analyzed the content of the 316 advertisements. A head coder led the coding team and coded all job advertisements across categories. Two supplementary

coders were used to check the work of the primary coder to ensure that no coding category was coded in its entirety by only one person.

Coding was approached using a directed content analysis approach (Hsieh & Shannon, 2005). This coding strategy involves drawing on existing theories or frameworks to inform initial coding categories. Predetermined codes are thus employed but are expanded as the coding progresses so that "data that cannot be coded are identified and analyzed later to determine if they represent a new category or a subcategory of an existing code" (Hseih & Shannon, 2005, p. 1282). For example, essential skills were coded in this project using a framework of nine essential skills designed by ESDC, but mentions of skills that did not fit within the framework were also collected, eventually forming the basis for another eight skills categories.

Unifying ideas emerging from the job advertisements were ultimately sorted into four categories: position details, formal education, work experience and essential skills. The section that follows briefly discusses each of these categories.

1. Position Details

In order to build a broad profile of the job advertisements in our sample, the following information was collected:

- Name of position
- Company
- Province of job opening
- Occupation type, as determined by the job position's corresponding 2011 National Occupation Classification (NOC) code

National Occupation Classification (NOC) – First Digit

Although many of these categories are self-explanatory, it is worth elaborating on how and why we coded for occupation type. This was done by matching the position titles of the job postings against ESDC's 2011 National Occupation Classification (NOC) system and NOC Occupational Structure.[1] Matching job advertisements to their NOC allows us to sort the advertisements into the following occupation types based on the first digit of the NOC code:

[1] http://www5.hrsdc.gc.ca/NOC/English/NOC/2011/OccupationIndex.aspx

Table 1: NOC Occupation Types (1st Digit)

NOC (1ST Digit)	Occupation Type	NOC (1ST Digit)	Occupation Type
0	Management Occupations	5	Occupations in Art, Culture, Recreation and Sport
1	Business, Finance and Administration Occupations	6	Sales and Services Occupations
2	Natural and Applied Sciences and Related Occupations	7	Trades, Transport and Equipment Operators and Related Occupations
3	Health Occupations	8	Natural Resources, Agriculture and Related Occupations
4	Occupations in Education, Law and Social, Community and Government Services	9	Occupations in Manufacturing and Utilities

1. Formal Education

To get a sense of what PSE credentials were most commonly requested by employers on employment websites, we also coded information pertaining to the formal education requirements for the job posting. For formal education, the following was coded:

- Specified level of education
- Education level (referred to as skill level by ESDC) associated with the job position's NOC code
- Preferred field(s) of study
- Openness to other field(s) of study

Specified Credential

Each job advertisement was coded for the credential that was requested by an employer. A number of keywords were grouped into five education categories. These categories and keywords are:

Table 2: Credential and Common Keywords

Coding Category	Common Keywords
Postsecondary education (non-specific)	"college or university degree;" "degree or diploma;" "university degree or equivalent"
University degree	"university degree;" "bachelor's degree;" "undergraduate degree"
College diploma or degree	"diploma;" "college diploma"
Certificate primarily granted by colleges	"certificate;" "college diploma"
Apprenticed trade positions	"journeyman"
"Some college coursework"	"some college coursework"
Certificate primarily granted by private career colleges/institutions	

National Occupation Classification (NOC) – Second Digit

ESDC's NOC codes were also used to assess educational requirements because the second digit of the job's NOC code tells us what level of education ESDC considers to be normally associated with a job title. This allows us to determine the level of education that ESDC expects a suitable candidate for a position in one of our job advertisements to possess, which can be compared to the level of education actually requested in the advertisement. Possible levels of education are:

Table 3: NOC Skill Types (2nd Digit)

NOC (2nd Digit)	Skill/Education Level
0 and 1	Occupations Usually Requiring University Education
2 and 3	Occupations Usually Requiring College or Vocational Education or Apprenticeship
4 and 5	Occupations Usually Requiring Secondary School and/or Occupation-specific Training
6 and 7	Occupations Where Required On-the-job Training is Usually Provided

Preferred Field of Study

Many job advertisements requested that the degree possessed by the job seeker be in a particular field(s) of study. For example, a job advertisement might ask for "a university degree in communications, public policy or journalism." In order to capture the diversity of fields of study being requested by employers, we counted the mentions of each field. Relying heavily on the University of Toronto's categorization of academic disciplines, Ontario Colleges' classification of college-specific programs[2] and the Ontario Colleges of Trades' classification of trades[3], fields of study were grouped as follows:

1. Humanities
2. Natural sciences
3. Formal sciences
4. Social sciences
5. Agriculture
6. Architecture & design
7. Business
8. Education
9. Engineering
10. Healthcare sciences
11. Journalism, media studies & communications
12. Library & museum studies
13. Public administration
14. Office administration
15. Computer & telecommunications
16. Culinary, hospitality, recreation & tourism
17. Community & social services
18. Fire, justice/law & security
19. Health, food & medical
20. Insurance
21. Trades
22. Performance arts

Openness to Other Fields of Study

While many job advertisements were explicit in requesting candidates with credentials only in specific disciplines, other job advertisements were open to unspecified or "related" fields of study. We coded whether or not an employer was open to a candidate with a non-specified disciplinary background or one outside of that which they requested.

Work Experience

Another common theme emerging from the job advertisements was the mention of work experience. In particular, the following information pertaining to work experience was collected:

- Minimum years of work experience requested
- Maximum years of work experience requested
- Is the type of experience specified or is any type of experience accepted?

Minimum and Maximum Years of Work Experience Requested

Many jobs requested that applicants fall within a range of years of work experience (e.g., three to five years). We coded both the maximum and minimum numbers of years requested to capture these ranges.

Is the type of experience specified or is any type of experience accepted?

Some employers wanted job-specific experience (e.g., an employer seeking an administrative assistant might ask for two years of work experience as an administrative assistant), while others considered any experience in a workplace to be sufficient. These job advertisements simply asked for some number of years of "work experience." It was noted whether a job advertisement asked for the former or the latter.

[2] http://www.ontariocolleges.ca/findprogram
[3] http://www.collegeoftrades.ca/about/trades-in-ontario

Essential Skills

One of the most difficult details to capture in the coding was the immense diversity of essential skills requested by employers in the job advertisements. To try to translate this diversity into something more manageable, we used ESDC's (2013) categorization of essential skills as a springboard. ESDC's list of essential skills comprises nine skills considered to be fundamental to "work, learning and life." These nine skills are reading, document use, numeracy, writing, oral communication, working with others, thinking, computer use and continuous learning (Table 4).

We wanted our coding to portray the relative value employers place on each of these skills, which we determined would best be approximated if we coded each job advertisement for the number of times an activity listed in that job advertisement required an essential skill rather than simply whether or not that skill appeared at all. For example, if a job advertisement listed main duties for that position as including "reading and writing project briefs and reports" and then later listed "good written communication" as a required skill, the advertisement would be coded as having two mentions of writing and one mention of reading.

A number of keywords emerged that helped determine if information listed in the job advertisement fit into one or more of the essential skill categories. Table 4 lists some of these common keywords.

Table 4: ESDC's Essential Skills Definitions and Common Keywords

Essential Skill	ESDC Definition	Common Keywords
Reading	Understanding materials written in sentences or paragraphs (e.g., letters, manuals)	gathering information; compiling information; reviewing literature; researching; extracting content
Document Use	Finding, understanding or entering information (e.g., text, symbols, numbers) in various documents, such as tables or forms	providing documentation; filling in forms; verifying reports; documenting activity; data entry; transcribing; record keeping; payroll documentation; accounting documentation
Numeracy	Using numbers and thinking in quantitative terms to complete tasks	producing statistics; forecasting; analyzing data; modelling; metrics and analytics; evaluating data; economic analysis
Writing	Communicating by arranging words, numbers and symbols on paper or a computer screen	developing materials; producing or preparing written documents; editing; written communications; spelling and grammar; developing content; writing emails
Oral Communication	Using speech to exchange thoughts and information	verbal communication; telephoning; delivering presentations; greeting people; teaching and training; responding to inquiries
Working with Others	Interacting with others to complete tasks	interpersonal skills; customer service skills; teaching and training; leadership; negotiating; collaborating; networking; coordinating with

Essential Skill	ESDC Definition	Common Keywords
Thinking	Finding and evaluating information to make rational decisions or to organize work	innovative; analytical; problem solving; investigating; assessing; critical thinking; making recommendations; evaluating; developing strategies; developing policies and proposals
Computer Use	Using computers and other forms of technology	proficiency in Microsoft Word; website coordination; typing; social media; managing online databases; computer skills; emails; IT management; database development; software use; programming; IT service desk
Continuous Learning	Participating in an ongoing process or improving skills and knowledge	initiative; willingness to learn; adaptable; likes challenge; constant learner

Throughout the coding process, a number of themes emerged from the job advertisements that did not fit within EDSC's characterization of essential skills. These skills (based on associated keywords) were coded into the following categories:

Table 5: Other Skills Appearing in Job Advertisements and Common Keywords

Essential Skill	Common Keywords
Administration and Organization Skills	administration; organizational skills; logistical coordination; clerical skills; day to day coordination; help plan events
Sales Skills	ability to sell; sales skills; meet sales quotas; convert sales leads; brand marketing; solicitation skills
Attention to Detail	attention to detail; detail oriented; high degree of accuracy; meticulous
Time Management	time management; multitasking; punctual; work in a fast paced environment; work under pressure
Ability to Work Independently	self-motivated; work independently; work unsupervised
Social Responsibility, Professional Responsibility and Judgment	professionalism; strong sense of judgment; maintains confidentiality; mature; political engagement; concern for environment; integrity; values
Visual Skills (eye for design)	design skills; visual design; print design; communicate through design; prepare drawings; read drawings
Other Skills	(see below)

The “other skills” category was used to collect a number of terms that appeared frequently in advertisements but that had no obvious place in the delineated coding categories. These terms were: persistence/determination; reliable/dependable; flexible; driven; entrepreneurial; results/goal oriented; dynamic; confident; hard worker; quick learner; passionate; energetic; enthusiastic; positive attitude; follows direction; courteous; competitive; resourceful; and sense of humour. For each of these terms, it was noted whether or not they appeared (on a yes/no basis) in a given job advertisement.

Inter-observer reliability

With the exception of the essential skills coding, the information collected from the job advertisements – such as province, PSE requested, years of work experience – was coded into finite categories. For these sections, the head coder defined the codes, which were employed by both the head and second coder in coding these categories in their entirety. The head coder then checked their codes against the codes of the secondary coder, adjusting the data to account for misassigned codes. Misassigned codes were found to be the result of error rather than disagreement between coders.

The coding of essential skills was more complex because it required more subjective decision-making. As such, ensuring inter-observer reliability was paramount. Due to the time-intensiveness of the process, the essential skills section was coded primarily by one coder, so a second coder was used for “check-coding” (Scott, 1955) of a random sample of the advertisements. Starting with the randomly selected fourth job advertisement in the sample, the second coder coded every twentieth job advertisement. In doing so, they relied on an extensive list of keywords (a sample of which are listed above) prepared by the head coder. The findings of the head coder and second coder were then compared, with agreed upon discrepancies reconciled and non-agreement documented. Inter-observer reliability was calculated using Cohen’s Kappa coefficient, a statistical measure of inter-rater agreement. Cohen’s Kappa is considered a more robust measurement of inter-observer reliability than simple percent agreement because it accounts for the agreement that occurs by chance (Carletta, 1996). Reliability for the essential skills coding in this report was determined to be 0.88 (88%). While there is some disagreement as to how to interpret the Kappa statistic, Landis and Koch (1977) consider a Kappa of 0.81 to 1.00 to be “almost perfect”, while Krippendorff (1980) more conservatively considers a Kappa of 0.80 or greater to represent “good reliability.”

Study Limitations

There are several limitations that arise from both this study’s sampling methodology and its use of content analysis.

Sampling Limitations

It is important to recognize that online job postings do not fully reflect actual labour markets (Carnevale et al., 2014). Only certain types of employers advertise vacancies using online job search engines. Because of the cost associated with advertising on these search engines, it is likely that these websites are more commonly frequented by large businesses. Other employers may not advertise at all, choosing instead to rely on separate networks to do their hiring. For example, it has been observed that ‘white collar’ jobs are more commonly advertised online than are ‘blue collar’ positions (Carnevale et al., 2014). However, since the skills gap narrative stems in part from employers saying that they cannot find suitable candidates to fill their jobs, we would hope to see employers using all available avenues to recruit employees.

At the same time, job descriptions are often carefully crafted by human resource departments, particularly in large workplaces, and may reflect specific HR concerns more so than the preferences of the actual hiring unit. Other concerns include the fact that not all positions are advertised externally, while other positions are only advertised because union rules stipulate open competition, even though the employer has already found an internal candidate.

In the case of Charity Village, this search engine only posts jobs from non-profit organizations, so jobs in this sector are over-represented. However, only 8% of jobs in our sample were collected using Charity Village. Despite these limitations, online job databases provide valuable information on labour market demand as they are used extensively by both employers and job seekers (Carnevale et al., 2014). Of all mediums available for disseminating information on job openings, job postings on major search engines like Monster or Workopolis likely also reach the largest audience and are thus particularly useful in examining how employers maximize their chances of finding an employee with the hard-to-find skills they require.

Coding Limitations

A second set of limitations emerges when trying to extract information on skills demand from advertisements. Job advertisements may list any number of skills, ranked in no particular order. For this reason, we coded not only whether a skill was mentioned but also the number of times the job referenced activities relating to each skill. However, there is no guarantee that frequent mentions of a skill mean that that particular skill matters most to an employer.

At the same time, it is impossible in many job advertisements to discern whether the skills listed are required skills or merely preferred ones. Conversely, the fact that a skill is not listed does not mean that it is not important to employers. The very opposite may be true – an employer seeking a software developer may make infrequent mention of "computer use skills" because they consider these skills to be so fundamental to the job as to be assumed to be self-evident to the applicant.

Several researchers have furthermore acknowledged that skills listed in job advertisements may suffer from being inconsistently defined, so that two employers may interpret what appears to be the same skill on paper very differently (Gallivan, Truex & Kvasny, 2004).

Another common problem was the poor quality of job advertisements. It was not unusual to find job advertisements that were riddled with spelling mistakes, missing words, contradictions and/or generally confusing statements. These problems were at times significant enough to impede the ability of the coder to assess the content of the job advertisements accurately.

Finally, although this content analysis of job advertisements was useful in identifying the skills demanded by the Canadian labour market, it falls short in its inability to tell us anything about the job advertisement's outcome. Did the employer find an employee with suitable skills? Why or why not? There may be a variety of reasons why an employer did not hire a candidate who fit the job advertisement, none of which will be possible to identify in this study. For example, candidates may be interviewed, none of whom possess the skills in demand. Or, despite the availability of candidates with the skills listed in the job advertisement, employers may hire a candidate with a different skillset. Another potential outcome is that the employer hired a candidate with the skillset demanded in the job advertisement but that the skills listed in the job advertisement were not really necessary for the day-to-day work of the successful candidate (Harper, 2012). All of these outcomes point to different root causes of Canada's real or perceived skills gap, but none of them can be identified through this content analysis. However, many of these questions will be explored in *Bridging the Divide, Part II: What Canadian Job Ads Produced*.

Findings

Occupational Type

Using the NOC code associated with each job position, we tracked the distribution of job advertisements across occupation type.

Figure 3: Job Postings by Occupation Type

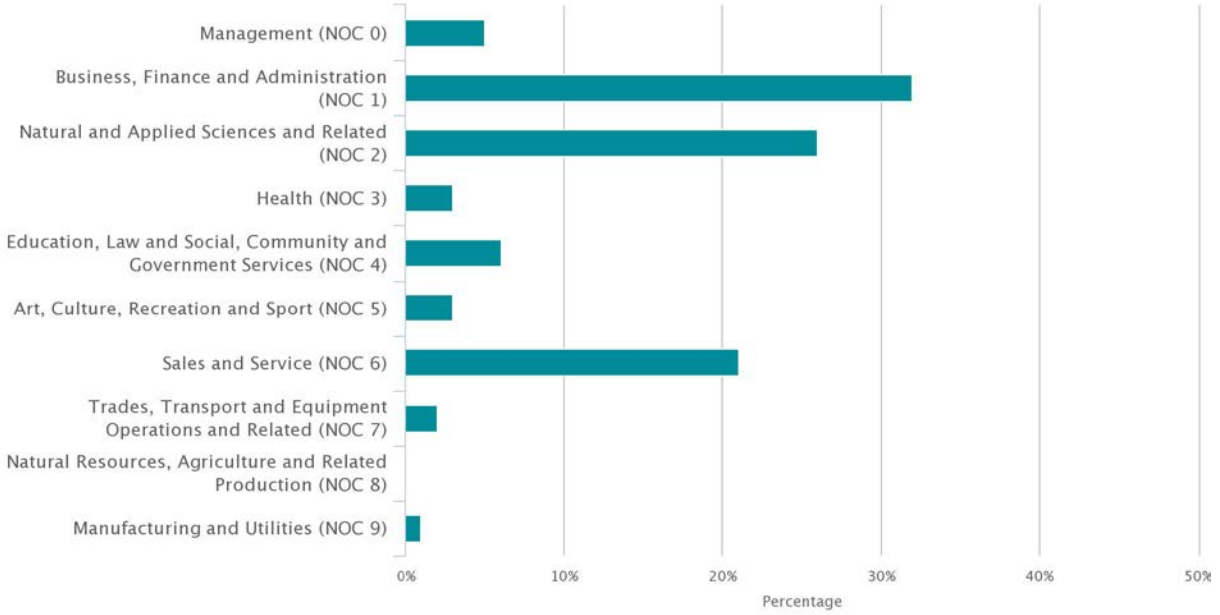


Figure 3 shows that the largest number of job advertisements – almost one-third of all positions – was in occupations in Business, Finance and Administration. Of these 101 job advertisements, the largest segment of jobs (39%) was for administrative positions, either in administrative and regulatory positions or as office administrative assistants. Common job titles included “office administrator,” “administrative assistant,” “program assistant,” “coordinator” and “program coordinator.”

The second most common occupation type was Natural and Applied Sciences and Related Occupations, which represented 26% of our sample. Within this occupation group, over half of the job advertisements (57%) were either systems professionals or technical occupations in computer and information systems. Common job titles included “systems analyst,” “database developer,” “software engineer,” “systems administrator,” “help desk analyst” and “network administrator.”

Jobs in sales and service occupations were the third most commonly advertised positions, accounting for 21% of jobs in our sample of advertisements. Of these 66 job advertisements, just under one-third (30%) were looking for financial sales representatives, and specifically for personal banking officers to work the front lines in Canadian banks and credit unions.

Thinking back to both Benjamin Tal (2012) and ESDC’s (2011) COPS lists of occupations forecasted to face shortages (discussed in *The Great Skills Divide*), it is evident that there is not an overly strong relationship

between their lists of occupational shortages and the occupation types of the positions advertised in our sample. While both Tal and COPS list a number of shortages in the three occupational types most represented in our sample – Business, Finance and Administration; Natural and Applied Sciences and Related; and Sales and Services – these positions do not form the majority of shortages in either list. Instead, both Tal and COPS forecast health occupations to face the most significant shortages, but these occupations represent less than 4% of our sample. This discrepancy most likely points to how different occupations recruit for and fill vacancies. Many of the positions in health occupations (e.g., doctors or nurses) are extensively regulated and job placements are coordinated by organizations that work directly with PSE programs rather than through public job postings.

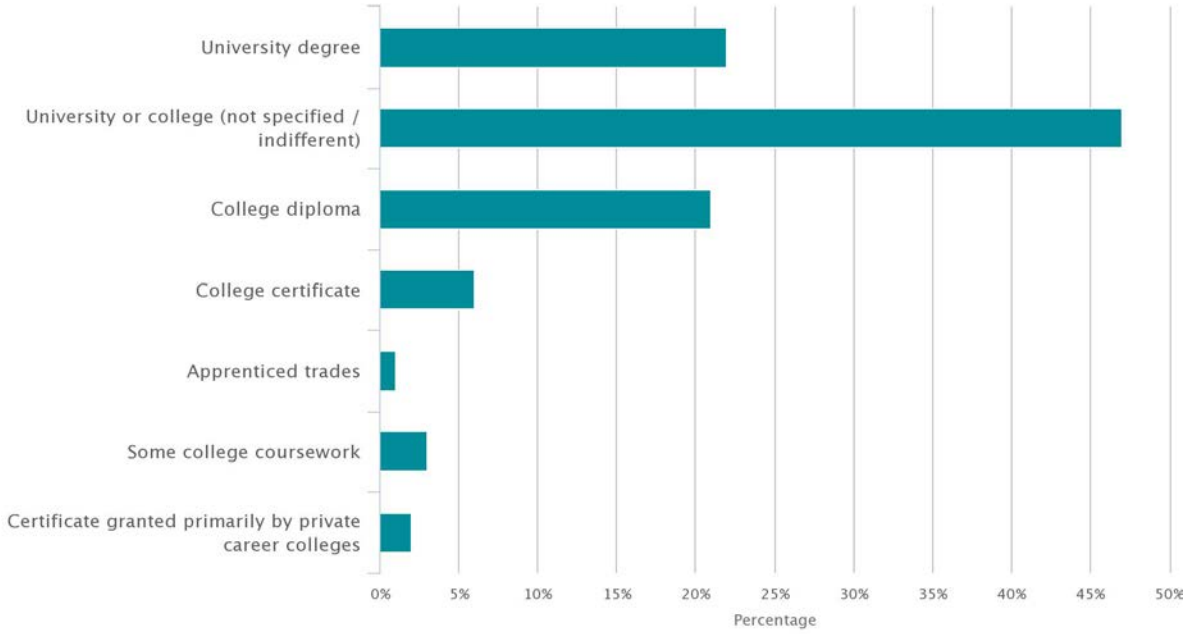
Interestingly, our breakdown of job advertisements by occupational type in Canada aligns quite closely with Carnevale et al.'s (2014) findings on in-demand occupational clusters in the United States. Carnevale et al. found that positions in the managerial/professional office cluster were most frequently advertised (accounting for 33% of positions in our sample), while positions in STEM came second (28%) and sales/office support positions ranked third (14%). Unlike our findings, Carnevale and his team have healthcare professional/technical occupations ranked fourth (at 11%), a finding that may partially be explained by the relative deregulation of the healthcare industry in the US when compared to Canada.

Education

1. Level of PSE

Examining the specified level of education for job advertisements highlighted several trends.

Figure 4: Job Postings by Level of Postsecondary Education



First, almost half of all jobs (47%) asked for a postsecondary degree but were indifferent as to whether or not it was granted by a college or a university. There were two ways in which employers most frequently voiced this requirement. The first was to request that suitable candidates have "postsecondary education in … [x field

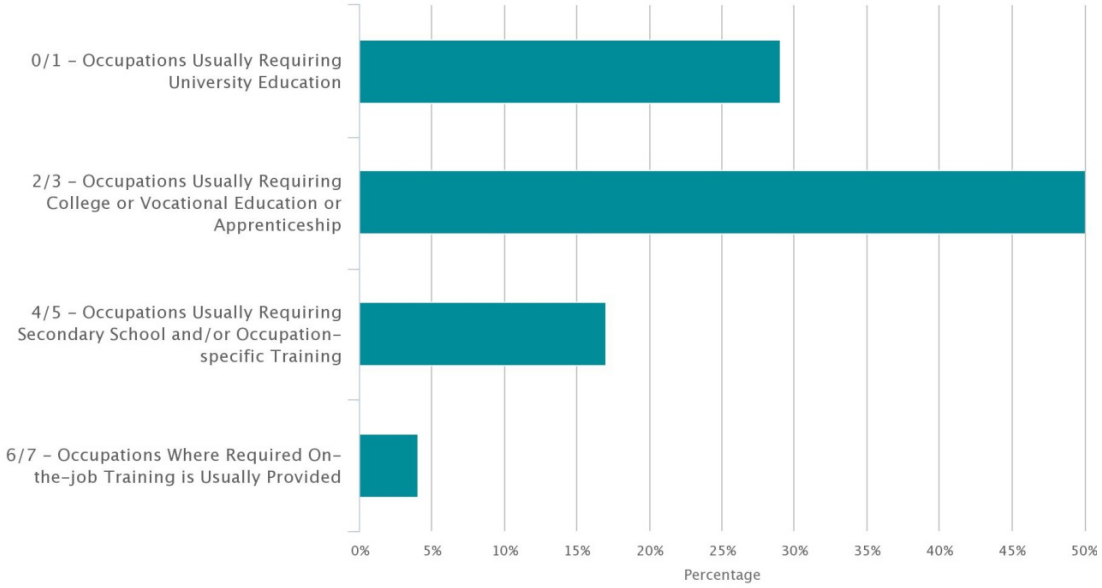
of study].” The second was to request that candidates have “a university degree or college diploma in … [x field of study].”

University-specific degrees were requested 22% of the time. These jobs requested “university degrees,” “bachelor’s degrees” or “undergraduate degrees,” often in specified fields. Notably, college diplomas were requested with almost the same frequency (21% of the time). However, once other college credentials are added, such as college certificates, apprenticed trade positions and “some college coursework,” this value increased to 31%, surpassing requests for university degrees.

2. NOC Skill Level

We were interested in examining if ‘credential creep’ was apparent in our job postings. This occurs when employers demand increasingly greater levels of PSE for the same position over time. To assess credential creep, we again used ESDC’s (2011) NOC codes, which allow us to determine (through the second digit of the code) the level of education that ESDC expects the suitable candidate for a specific job title to possess.

Figure 5: Job Postings by NOC Skill Level



By matching the level of education normally required for a position (as per the NOC) with the level of education requested in the actual job advertisement, we get a sense of the extent to which employers are seeking “overqualified” employees.

Table 6: Level of PSE Requested in Job Advertisement by NOC Skill Level

NOC Skill Level	Level of PSE Requested: University	University or College (Indifferent)	College Diploma	College Certificate	Apprenticed Trades	Some College Coursework	Certificate (Private)	Total
University Education	36	46	7	3	0	0	0	92
College or Vocational Education/ Apprenticeship	23	82	34	10	3	3	4	159
Secondary School and/or Occupation-specific Training	7	15	24	3	0	3	1	53
On-the-job Training	2	5	1	2	0	2	0	12
Total	68	148	66	18	3	8	5	

The grey squares in Table 6 show the incidence of overlap between the skill level prescribed by NOC coding and the education level actually requested in the job advertisement. In total, 218 of the 316 job advertisements (69%) requested the level of education anticipated by the NOC.

In particular, of the 92 job titles determined by NOC coding to require a university education, 36 of these jobs (39%) actually requested a university-specific credential in the advertisement. However, this number rises markedly if we include job advertisements that did not differentiate between college and university PSE, since a further 46 of the 92 positions (50%) indicated no preference between a university degree and a college credential. If we include the latter category, a total of 89% of the positions expected to be within the NOC's university education category actually requested this level of education in the job advertisement.

Of the 159 job positions determined by NOC coding to normally require college, vocational education or apprenticeship, 54 postings (34%) actually requested one of these credentials. A further 82 job advertisements (51%) would accept either college or university. Altogether, this means that 88% in this NOC category would actually accept college, vocational education or apprenticeship training. On the other hand, only 23 job postings (14.4% of all job advertisements) displayed what could be considered credential creep, requesting a university degree rather than a college/vocational/apprenticeship credential.

Finally, it is striking to observe that a number of jobs that the NOC categorizes as "low-skilled" occupations – occupations deemed to require either secondary school, less than two years of occupation-specific training or training courses, or simply on-the-job training – request extensive PSE experience in the actual job advertisement. Looking at these two "low-skilled" categories, we see a combined total of 54 job positions (82% of jobs classified by NOC as low-skilled) ask for either a university degree, university or college education, or a college diploma.[4] And while this sample is skewed because we only collected job advertisements that explicitly requested some type of postsecondary education, one might expect to find these jobs requesting some college coursework or less rather than full-scale undergraduate degrees or college diplomas.

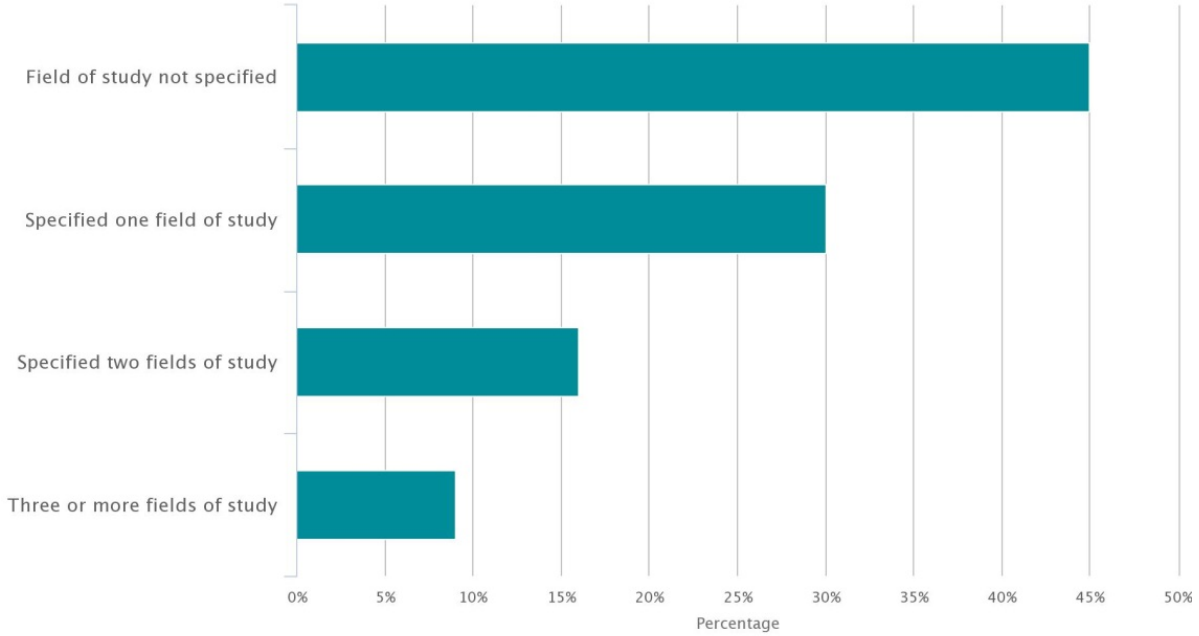
[4] College certificate, apprenticed trades, some college coursework and private certificates were left out, since there is a good deal of murkiness surrounding whether these count as less than two years of occupation-specific training or training courses.

3. Fields of Study

Although all employers in our sample sought candidates with a PSE credential, they varied as to how specific a credential they requested. Just under half of all job postings (45%) did not specify a field of study, requesting instead a general PSE credential like a “university degree” or “college diploma.”

For the 173 job advertisements (55%) that did specify, employers listed between one and six acceptable fields of study. Thus, an employer might request “a university degree in business” or, more broadly, “a university degree in business, statistics, or economics.” Of the 173 job advertisements that did specify, over half (55%) specified only one field. A further 29% specified two fields and 9% specified three fields.

Figure 6: Job Advertisements by Number of Fields of Study



We also captured the number of times each specific field was mentioned across job advertisements.

Table 7: Job Advertisements by Field of Study

Field of Study	Number of Mentions	Percent of Total Field of Study Requests
Business	94	32%
Engineering	38	13%
Formal sciences	25	9%
Architecture and design	18	6%
Computer and telecommunications	17	6%
Trades	14	5%
Natural sciences	10	3%
Social sciences	8	3%
Healthcare sciences	8	3%
Journalism, media studies and communications	10	3%
Office administration	9	3%
Fire, justice/law and security	9	3%
Health, food and medical	9	3%
Humanities	5	2%
Community and social services	7	2%
Education	2	1%
Pubic administration	2	1%
Culinary, hospitality, recreation and tourism	2	1%
Insurance	4	1%
Agriculture	1	0.3%
Library and museum studies	1	0.3%
Performance arts	1	0.3%
Total:	294	100%

As was the case when we disaggregated the job advertisements by occupation type, natural and applied sciences and business again dominate the list of fields of study in demand by employers. Degrees in business, including degrees in business administration, commerce, finance and management, were requested most frequently, in 32% of the cases where a specific field was mentioned. Engineering degrees – civil engineering, mechanical engineering, mining engineering and computer engineering – were the second most commonly requested field of study, accounting for 13% of all specific field of study requests. Formal science degrees were third most requested at 9%, with employers most commonly asking for degrees in computer science, mathematics and statistics.

Some of the 173 job advertisements that requested at least one specific field of study also stated that they would accept a “similar” or “related field” (e.g., university degree in computer science or related discipline).

Table 8: Job Advertisements by Openness to Other Fields of Study

Openness to Other Fields of Study	Number of Mentions	Percent
Open to other or "related" fields	49	28%
Not open to other fields	124	72%
Total:	173	100%

Of the 173 positions that did stipulate a field of study, 28% were open to related or similar disciplines, while the other 72% specified which fields would be suitable for the job position.

One reason why we tracked the openness of employers to candidates with varied disciplinary backgrounds was to test the assumption of many educators that the value of a PSE credential lies primarily in honing essential skills like critical thinking or problem solving rather than in the disciplinary knowledge learned in any particular field of study. Thus, one question to ask is to what extent employers hire university and college graduates because they associate PSE credentials with stronger essential skills, as opposed to hiring candidates with specific disciplinary knowledge. In this regard, the frequency with which employers either did not specify a field of study or were open to candidates with fairly broad disciplinary backgrounds (a combined 61% of the time across all job postings) suggests that employers hire candidates with PSE for reasons that go beyond just the specific disciplinary knowledge of that candidate.

Work Experience

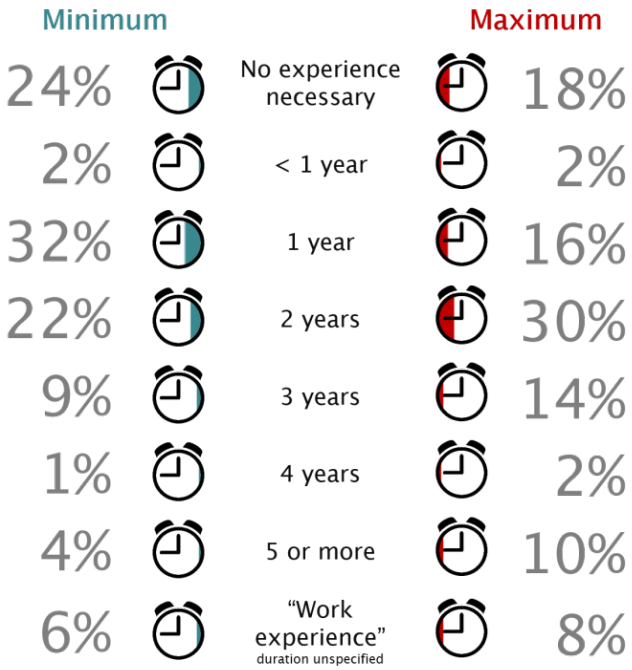
1. Years of Work Experience

The amount of work experience requested by employers for entry-level positions for PSE graduates provides insight into this idea of an "experience gap" – the gap between the number of years of work experience employers expect of recent PSE graduates and the number of years these graduates can reasonably have accumulated upon graduation.

Our research looked at both the minimum and maximum number of years of work experience requested by employers. This allowed us to capture the tendency of employers to specify a range of accepted work experience (e.g., two to five years).[5]

[5] If employers specified one amount (e.g., four years), this number was considered both the minimum and maximum.

Figure 7: Job Advertisements by Minimum and Maximum Years of Work Experience



From Figure 7, it is striking to observe how few of what are ostensibly entry-level positions are interested in candidates without work experience. Less than one-quarter of all employers (24%) stated that zero years[6] was their *minimum* requirement for years of work experience, a number that decreases to 18% when assessed for maximum years of work experience requested.

Also of interest for new PSE graduates is that only five jobs (2%) advertised for candidates with less than one year (but more than zero years) of work experience. This is notable because this category included the type of work experience recent PSE graduates can most easily acquire while in school – summer internship/work experience (requested in two advertisements) and/or co-op experience (requested in one advertisement).

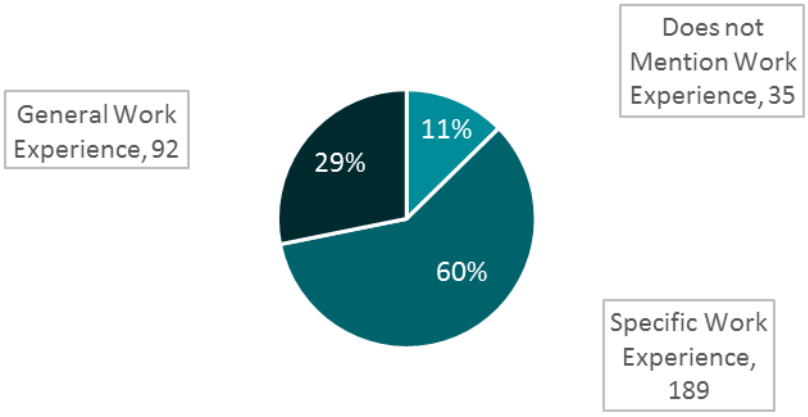
On average, employers that requested work experience asked for a minimum of 1.43 years of work experience and a maximum of 1.99 years of work experience.

2. Type of Work Experience

In addition to specifying the number of years of work experience desired in job candidates, many employers also expected a candidate's work experience to relate directly to the advertised position. In total, 60% of employers wanted job-specific experience (Figure 8).

[6] Jobs that did not mention work experience at all were assumed to be requesting zero years of work experience for both their minimum and maximum.

Figure 8: Job Advertisements by Type of Work Experience



What is perhaps more surprising is that 29% of employers cared only that the job applicant have some number of years of work experience but were unconcerned as to from where came that experience. This raises the question of why employers prefer job applicants with general work experience. Are there certain skills that employers believe candidates with general work experience bring to the workplace that they find to be lacking in recent PSE graduates without this experience? More broadly, why are employers hesitant to employ students right out of PSE, opting instead to seek candidates with work experience? Although not answerable through our content analysis, these questions have important implications for the PSE sector.

Essential Skills

In order to better understand what essential skills matter most to employers when making hiring decisions, we examined how employers articulate, prioritize and rank these skills in job postings.

Figures 9 and 10 show the most frequently requested essential skills, measured by whether or not a skill was mentioned at least once in a job advertisement. Figure 9 also shows the total number of times that each skill was mentioned in all of the 316 job advertisements, as a percent of the total of all mentions of skills (6,322 mentions).

Figure 9: Job Advertisements by Essential Skills

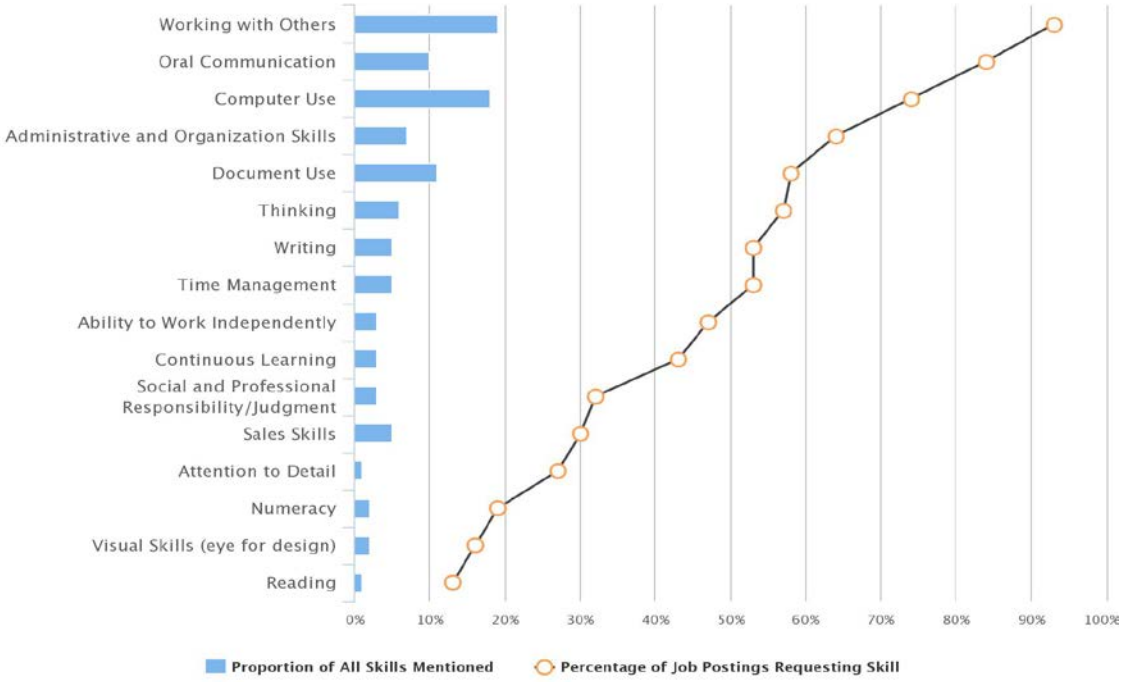
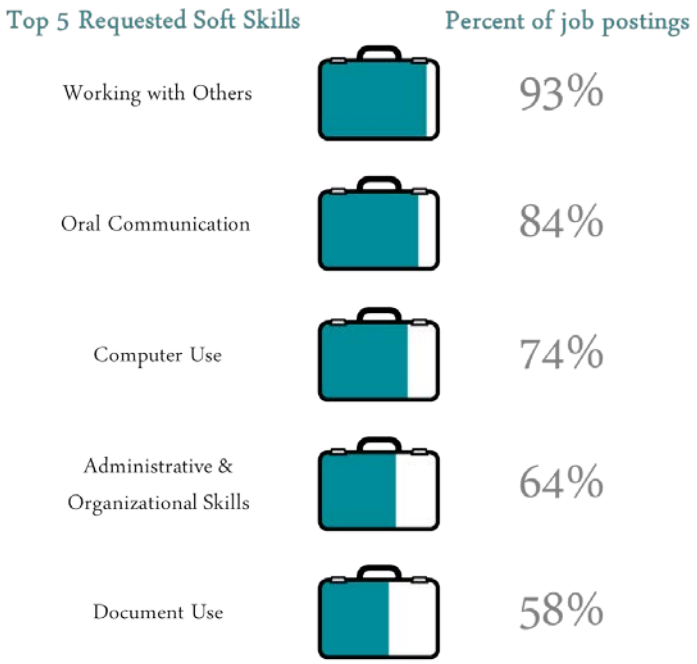


Figure 10: Top 5 Essential Skills Measured by Percentage of Job Postings Requesting Skill



Although this paper will not examine each skill in detail, our comparison of the number of job advertisements in which a skill was mentioned to the total number of times a skill was mentioned leads to several observations worth highlighting.

1. Working with Others

Working with others – defined as interacting with others to complete tasks – was the most frequently requested skill in terms of both the number of job advertisements in which it was requested and its total number of mentions. This skill was sought in 93% of all job advertisements.

Activities and abilities associated with the skill of working with others were requested a total of 1,190 times in the 316 job advertisements, accounting for 19% of all skills requested by employers. Moreover, employers that mentioned the skill of working with others did so an average of 4.03 times per job advertisement.

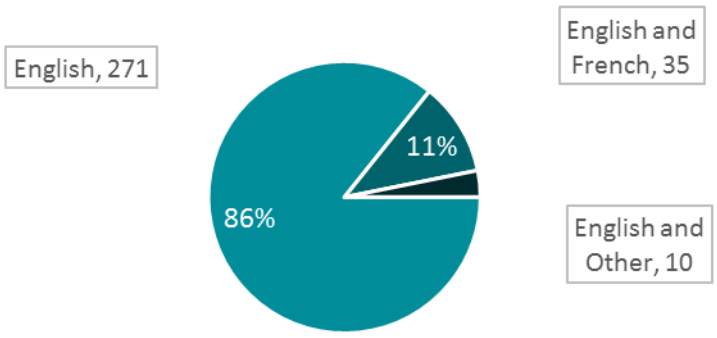
2. Oral Communication

Oral communication – using speech to exchange thoughts and information – was the second most commonly requested skill by number of job advertisements, with 84% of employers requesting this skill.

Although more employers asked for oral communication than any other skill except working with others, they asked for it less frequently; when measured by the number of total mentions of abilities or tasks indicative of oral communication, this skill falls to fourth (with 10% of all mentions), behind working with others, computer use and document use. On average, employers that asked for oral communication skills did so 2.33 times per job advertisement.

It is worth noting that the decision was made to separate requests for French and/or other non-English language fluency out of oral communication, so these requests are not included in the above counts. A separate analysis found that 86% of job advertisements were for English-only positions, 11% were for French bilingual positions and 3% were for other bilingual positions (Figure 15). The latter category included job advertisements requesting Spanish, Korean/Mandarin/Cantonese or Punjabi, Dutch and/or the ability to speak an unspecified “second language.”

Figure 11: Job Advertisements by Languages Requested



3. Computer Use

When measured in terms of the number of job advertisements in which a skill was requested, computer use – using computers and other forms of technology – was the third most frequently mentioned skill, appearing in 74% of all job advertisements. However, when measured using total number of mentions, computer use moved to second most important, constituting 18% of all skills mentioned. On average, employers that listed activities and/or abilities that require computer skills did so 4.72 times per job advertisement.

Table 9: Job Advertisements by Computer Use

Number of Times a Job Advertisement Mentions Computer Use	Number of Job Postings	Total Mentions
0	81	0
1	67	67
2	53	106
3	19	57
4	19	76
5	14	70
6	9	54
7	12	84
8	6	48
9	9	81
10	6	60
11	2	22
12	2	24
13	1	13
14	3	42
15-47	13	306
Total:	316	1110

Table 9 shows that the range of times a job advertisement mentioned “computer use” is much wider than for other skills, with a maximum value of 47 mentions in a single job advertisement. This reflects the fact that postings advertising jobs in computer and information systems – including help desk analysts and technicians, systems administrators, software applications analysts and network analysts – tended to list a number of specific and advanced computer skills. These skills ranged widely, from software development to network or server support, familiarity with specific operating systems, familiarity with specific software, and/or programming and scripting. It was also notable that job advertisements with extensive lists of advanced computer skills often listed little else in terms of other essential skills. At most, one line at the bottom of the job advertisement might diverge from computer skills to request some variation of “good oral and written communication skills.”

To help us differentiate between jobs that required these advanced computer skills and jobs that only required more basic computer use, Table 10 shows the number of job advertisements and total mentions for basic computer skills only. These basic skills include generic “computer skills,” keyboarding skills, emailing and

familiarity with Microsoft Office. Table 10 shows that 47% of employers did not request any basic computer skills. However, this number is deceiving since many of these employers still requested advanced computer use; just under half (45%) of these employers, while listing no basic computer skills, listed advanced computer skill in their job postings. Thus, it should also be observed that 33% of employers requested one basic computer skill, most commonly either emailing or familiarity with Microsoft Office.

Table 10: Job Advertisements by Computer Use (Basic Only)

Number of Times a Job Advertisement Mentions Basic Computer Use	Number of Job Postings	Total Mentions
0	147	0
1	104	104
2	45	90
3	7	21
4	6	24
5	3	15
6	3	18
7	1	7
Total:	316	279

4. Document Use

Document use is defined as "finding, understanding, or entering information (e.g., text, symbols, numbers) in various documents, such as tables or forms" (ESDC, 2013). Although document use was only the fifth most requested skill in terms of number of job advertisements (mentioned 58% of the time), it moves to third when measured by total number of mentions (accounting for 11% of all mentions of skills). On average, employers that mentioned activities and/or abilities associated with document use did so 3.63 times per job advertisement. As previously mentioned, 32% of job advertisements were in business, finance or administration, and many of the mentions of document use referenced administrative tasks like filling out forms, entering data and/or record keeping.

5. Numeracy

Numeracy – using numbers and thinking in quantitative terms to complete tasks – was notable for the infrequency with which employers requested it. Numeracy ranks third from the bottom when measured by the number of job advertisements in which it is included (19%) and accounts for only 2% of all mentions of skills. Moreover, where numeracy was requested, it was mentioned an average of only 1.73 times.

Table 11: Job Advertisements by Numeracy

Number of Times a Job Advertisement Mentions Numeracy	Number of Job Postings	Total Mentions
0	255	0
1	41	41
2	10	20
3	4	12
4	3	12
5	1	5
6	0	0
7	0	0
8	2	16
Total:	316	106

One reason that numeracy appeared infrequently in our job advertisements is that our initial coding of numeracy defined the skill quite narrowly. Based on the definition "thinking in quantitative terms," we focused on abilities and/or tasks that required numerical analysis or evaluation and excluded tasks that were focused on entering numbers in spreadsheets, such as accounting and payroll documentation.[7] When, in an alternate coding scheme, these tasks were considered to be part of numeracy skills, the number of job advertisements in which numeracy is mentioned increased from 61 (19%) to 111 advertisements (35%) and the total number of mentions increased from 106 to 369 (Table 12). For job advertisements in which numeracy was mentioned, the average number of mentions also increased from 1.73 to 3.32. However, although these are considerable increases, numeracy is still left far behind other skills like working with others, oral communication or organization skills.

[7] These abilities and tasks were included in document use.

Table 12: Job Advertisements by Numeracy (Expanded Definition)

Number of Times a Job Advertisement Mentions Numeracy (Expanded Definition)	Number of Job Postings	Total Mentions
0	205	0
1	35	35
2	30	60
3	10	30
4	14	56
5	5	25
6	3	18
7	3	21
8	3	24
9	2	18
10	0	0
11	1	11
12	2	24
13	1	13
14	0	0
15	0	0
16	1	16
17	0	0
18	1	18
Total:	316	369

Specifically Mentioned Skills

In addition to the list of essential skills discussed above, a number of precisely worded skills and attributes recurred throughout the job advertisements. For example, an employer might ask specifically for "entrepreneurial(ism)" or "a positive attitude." These skills were clearly important to employers but had no obvious home in our list of essential skills. For these skills, we coded only whether or not the job advertisement mentioned the exact term specified in the list of skills in Table 13.

Table 13: Job Advertisements by Other Skills

Specifically Mentioned Skills	Number of Job Advertisements in which Skill is Mentioned	Percent of All Job Advertisements
Results/goal-oriented	43	14%
Energetic	27	9%
Positive attitude	28	9%
Reliable/dependable	25	8%
Flexible	22	7%
Driven	19	6%
Entrepreneurial	15	5%
Quick learner	15	5%
Persistence/determination	12	4%
Ambitious/career-oriented	12	4%
Dynamic	14	4%
Passionate	12	4%
Enthusiastic	14	4%
Confident	8	3%
Hard worker	11	3%
Courteous	8	3%
Sense of humour	7	2%
Follows direction	4	1%
Competitive	3	1%
Resourceful	3	1%

This list of skills gives the reader a snapshot of the wide range of skills valued by employers. There were also a few unusual skill requests, including an employer who asked for “a demonstrated ability to attend work on a regular basis,” another who sought an employee “willing to wear company uniform” and one who detailed that no “prima donnas, mediocrity, excuses, indifference, [or] politics” would be accepted.

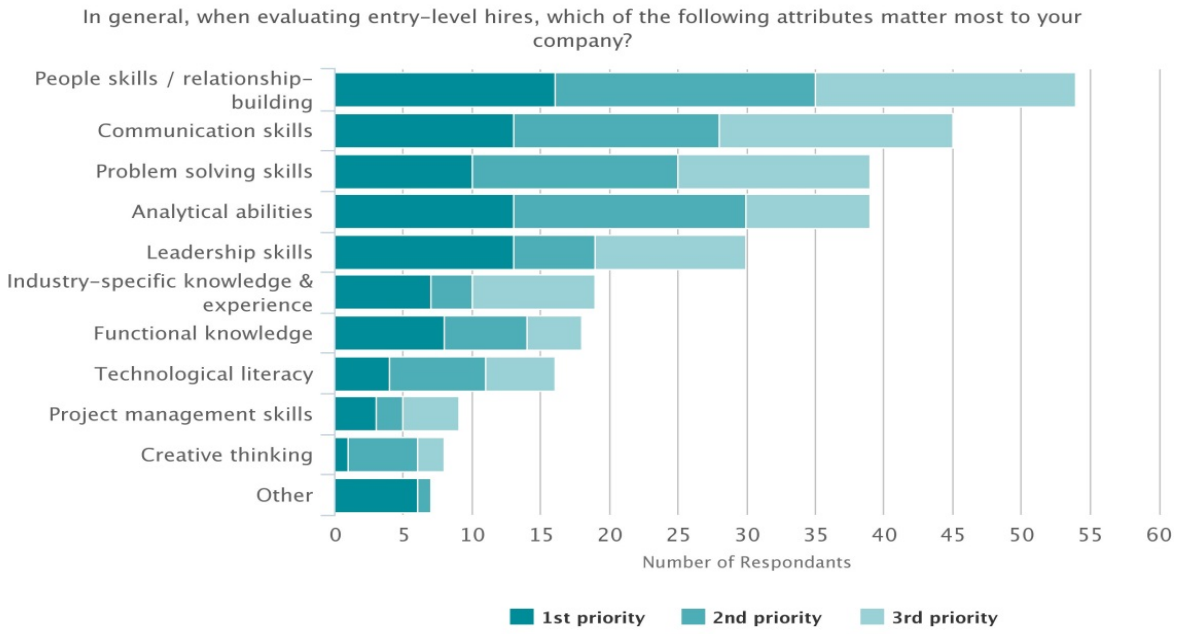
Comparing with Employer Surveys

Figure 9 (see page 28) summarizes how employers ranked each skill, measured both by the percent of job advertisements that listed a skill and by the number of times employers mentioned a skill relative to all other skills.

The question of how employers articulate their demand for skills has guided this study. Given our findings on how employers rank various skills against one another, we can also gain some rough insight into whether or not the relative value they place on each skill in job advertisements aligns with how they rank these skills when asked directly in employer surveys. To do so, we look at how employers rank their demand for skills in

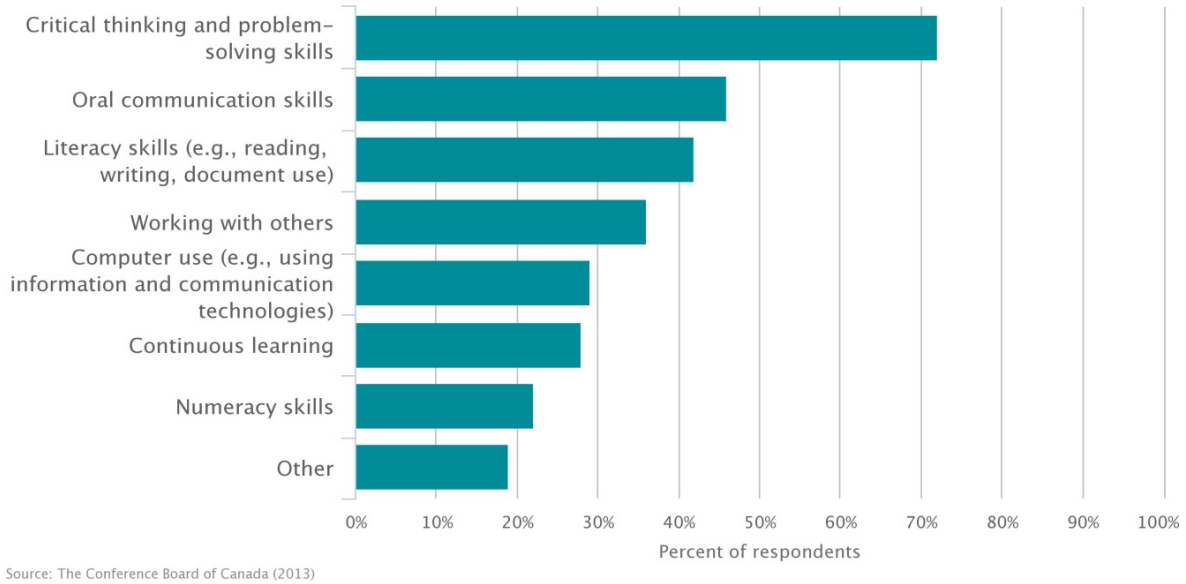
two employer surveys, one conducted by the Canadian Council of Chief Executives (Figure 12; CCCE, 2014) and the other by the Conference Board of Canada (Figure 13; Stuckey & Munro, 2013).

Figure 12: The CCCE's Attributes that Matter Most to Employers when Hiring



Source: Canadian Council of Chief Executives (CCCE. 2014)

Figure 13: The Conference Board of Canada's Essential Skills Gaps



Source: The Conference Board of Canada (2013)

Readers should bear in mind that the two employer surveys list different essential skills, making any comparison inexact. More significantly, the two surveys also ask different questions. While the CCCE survey asks employers which skills matter most to them, the Conference Board surveys is concerned with which skills employers find to be most deficient among current employees (in Ontario). As a result, comparing our results with those of the CCCE tells us if employers are actually asking for the skills they say they most desire in candidates, while a comparison with the Conference Board survey tells us if the skills shortages they say they face in the workplace are important enough to translate into active recruitment of employees based on these skills.

From our comparison of the skills rankings in job advertisements with those from employer surveys, it is striking to observe how important the skill of working with others is to employers. Working with others was the most frequently requested skill in job advertisements when measured both by number of job advertisements and total mentions, and employers ranked "people skills/relationship building" first in the Canadian Council of Chief Executives (CCCE) survey. Moreover, the Conference Board reports that just under 40% of employers are concerned with the ability of their employees to work with others.

Similarly, communication skills were also ranked highly across both job advertisements and the various employer surveys. In job advertisements, oral communication was the second most frequently requested skill and fourth by number of mentions, while the CCCE reports that communication skills are the second most valuable skill to employers[8] and the Conference Board finds oral communication skills to be second most deficient in employees.

Other skills show greater divergence. Both the CCCE and Conference Board surveys suggest that employers place high value on thinking skills, with "problem solving skills" and "analytical skills" the third and fourth most important skills for respondents in the CCCE survey, and "critical thinking and problem-solving skills" ranked first by employers as being deficient in the Conference Board survey. In contrast, our analysis of job advertisements, which grouped these skills (problem solving, analytical skills and critical thinking) under "thinking" skills, found that thinking was only the sixth most frequently mentioned skill in job advertisements. However, while the surveys suggest that employers place greater value and found larger deficiencies on thinking relative to other skills, it does not suggest that more employers value thinking in employer surveys than in job advertisements; 57% of job advertisements mentioned thinking, which is actually higher than the percentage of employers that stated that they value problem solving or analytical abilities in the CCCE survey.

Computer use was one of the most inconsistently ranked skills across job advertisements and employer surveys. Our job advertisement analysis found that computer use was the third most frequently listed skill (mentioned in 74% of job advertisements) and came second in number of mentions. Yet the CCCE survey found that less than 20% of employers listed "technological literacy" as a priority for employers when hiring in entry-level positions, and only about 30% of employers thought that their employees were deficient in computer use skills when asked by the Conference Board.

Finally, numeracy is notable for the infrequency with which it is mentioned both across job advertisements and in employer surveys. It appears only 20% of the time in job advertisements and is not even mentioned in the CCCE survey. While it does appear in the Conference Board's survey of skills deficiencies in current employees, only approximately 20% of employers were concerned with numeracy, making it the lowest ranked skill (with the exception of the "other" category). This finding is puzzling given that occupations that could be classified as STEM (science, technology, engineering and mathematics) jobs – and thus would be expected to require significant numerical abilities – accounted for 26% of our sample. This finding is additionally puzzling because the most recent results from the OECD's PIAAC skills survey show that

[8] Note that the CCCE report combines oral and written communication skills into one category, so we cannot discern specifically which skill employers are requesting.

Canadian adults possess below-average numeracy skills (Statistics Canada, 2013), so we might expect employers to be witnessing numeracy problems in their workplaces.

Conclusion

Few policy issues capture the attention of the media, policymakers and the public in quite the same way as has Canada's skills gap in the past few years. Spurred on by conflicting reports and data, the discussion shows no signs of abating. On the one hand, much of the aggregate labour market data (like wage and vacancy rates), skills projections by ESDC and others, and skills tests like those conducted by the OECD point to confined rather than broad gaps – in certain occupations and/or locations and in some skills (like numeracy) more so than others. On the other hand, employers continue to express that they cannot find employees with the skills they need for their operations.

This begs the question: when Canadian employers say that they cannot find employees with the skills they need for their workforce, to which skills are they actually referring? From our review of the literature in *The Great Skills Divide*, we found that employers tend to mean one of three different things when they talk about skills – education, essential skills or work experience. Unfortunately, these employer concerns have too often been conflated into a single "skills gap" narrative, making it difficult to ascertain if there is a problem, what that problem is and what might be done about it. The current paper thus sought to run a fine comb through the skills gap narrative, separating out the various strands of the debate as they emerged in job advertisements posted by employers looking to fill entry-level positions with skilled workers. We examined what employers look for in recent PSE graduates when it comes to credentials, essential skills and work experience.

Several findings stood out. In terms of education, while all employers in our sample required a PSE credential, almost half of employers were indifferent as to the candidate's specific field of study, possibly indicating that employers equate PSE with stronger broad employability skills rather than simply improved disciplinary knowledge. For work experience, a notable finding was that employers looked for an average of 1.4 to 2 years of work experience for candidates in *entry-level* positions, lending support to the argument made by Cappelli (2012) and others that employers are increasingly evading their responsibility to train new employees, expecting instead that recent graduates come to the workplace having already been trained elsewhere. For essential skills, we found that employers most clearly and frequently expressed that they needed employees who work well with others, communicate effectively orally and possess strong computer skills.

At the core of all of these issues is the relationship between postsecondary institutions and employers in shaping Canada's skilled workforce. If employers need employees with skills like oral communication and the ability to work with others, are these the same skills that we are teaching in PSE? More broadly, what skills should PSE graduates possess when they enter the workforce? Which of these skills are the responsibility of PSE institutions to teach and which are the responsibility of the employer? Answering these questions is beyond the scope of this paper. But one thing seems evident: ensuring that college and university graduates have the right skills for the Canadian labour market will require better labour market alignment, which can only be achieved through the active collaboration of both PSE institutions and employers.

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