Universities: A Talent Pipeline for Ontario Organizations?

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Executive Summary

Organizational success is increasingly reliant on talent management. Several trends have made managing talent more challenging. They have also changed the way organizations think about talent and go about managing it. While post-secondary education (PSE) is positioned to support organizations' talent management efforts, little is known about how organizations see PSE in the broader talent management picture. This paper presents two studies on the matter. Study 1 explored human resources (HR) professionals' perspectives towards talent, including the strategies their organizations use to recruit, develop, and retain exceptionally talented people, and the role(s) that PSE can play in supporting talent management programs. Study 2 analyzed a large data set of job postings in the University of Waterloo cooperative education (co-op) system. Results from study 1 suggested that talent is a multi-faceted concept comprised of work-readiness (previous experience and skills), potential (fit with the organization, interest in the organization and its work, and learning potential), and self-direction. Results also demonstrated that the talent management practices employed by an organization may be linked with their talent-related problems (the challenges they face). Work-integrated learning (WIL) and other forms of experiential education (EE) featured prominently in participants' vision for the contribution of PSE to organizations' talent management. Results from Study 2 showed that the contents of job advertisements across three selected programs have hardly changed over the course of a 10 year period, but that job advertisements differ substantially between the most and least popular jobs (in terms of applicant data). Together, these studies suggest that descriptions of talent may be multidimensional and consistent across time. Further, these findings provide several practical implications for PSE and directions for future research which are discussed within.

Introduction

Scholars suggest that the success of organizations is dependent on talent management. Talent refers to the characteristics of individuals who perform exceptionally well within the organization (Cappelli & Keller, 2014; Nijs, Gallardo-Gallardo, Dries, & Sels, 2014). Talent management refers to the process through which organizations acquire and retain talented people and mobilize them strategically throughout the organization (Cappelli & Keller, 2014). The quality of these programs is increasingly thought to contribute to organizational success (Beechler & Woodward, 2009; Lawler, 2008). Indeed, the World Economic Forum (2011) has suggested that human resources are quickly becoming more important than financial capital as an economic engine of the future.

Unfortunately, creating and maintaining a successful talent management program is no simple task. This is due in part to substantial pressures on those programs. The literature suggests that talented individuals are increasingly difficult to recruit because of increased competition in the recruitment space. Indeed, it is now commonplace to refer to many organizations as being in a "war for talent" (Dries, 2013). Further, trends such as an aging and retiring workforce have created several talent "gaps" (i.e., positions for which talented people are sought) which can be difficult to fill. The current rate of technological advancement and increasing diversity of the social landscape have also made finding and keeping talented people more difficult (see Chandler-Crichlow, D'Angela, Bringelson, & Harrington, 2012; Stone & Deadrick, 2015).

These trends have changed how organizations think about talent and the ways they go about managing it. Historically, the conversation around talent has centred on competencies and skills. These terms tend to refer to the knowledge or abilities required for success in a specific position within the organization (Boyatzis, 1982; Spencer & Spencer, 1993). They represent a

cognitive domain of a person which is thought to influence performance at work. However, an emerging perspective challenges this idea and instead argues that the personal characteristics that influence contributions to the organization also include various natural abilities, mastery over content, commitment (e.g., to the organization, to the job), and strong fit within the broader organizational culture (see Gallardo-Gallardo, Dries, & González-Cruz, 2013).

With an evolving view of talent, organizations' talent management practices are also changing. The literature shows that the most traditional talent management practices, such as job shadowing and 360-degree feedback procedures, were developed during the Second World War (Cappelli & Keller, 2014) and that they aren't enough to maintain a healthy talent management program. Increasing anecdotal evidence and evidence from the literature further suggests that organizations are adopting several newer practices within their talent management programs. For example, organizations are becoming increasingly more reliant on social media platforms to recruit new talented employees (e.g., Gibbs, MacDonald, & MacKay, 2015). Organizations such as Google build slides and sleep pods (small containers in which employees can rest) into their workplaces in order to improve the well-being of workers. Several organizations offer free meals so that employees need not worry about spending time away from the office – they can eat right at their desks for free. Ultimately, these efforts aim to increase employees' attachment to the organization and their productivity.

With these changes, there has been an increased interest in the ways in which post-secondary education (PSE) is preparing students to be successful. Changing social and political forces have encouraged PSE leaders to think more critically about preparing graduates for life after graduation. Universities and colleges are becoming acutely aware of the importance of creating career-ready graduates. It is no longer considered sufficient to provide students with a

great deal of knowledge. To be successful, students must also have other aspects of talent that make them desirable to employers. Institutions are therefore interested in understanding how they can support the development of talented graduates. Some are also interested in learning about how they can support organizations' talent management processes (i.e., searching for talent, developing talent).

Still, the role(s) that can be played by PSE institutions in support of talent management programs within organizations remains less clear. There is substantial discussion regarding the necessity for preparing students for post-graduation success. And yet, without a better understanding of the talent identification and management programs within organizations, it is difficult to advance the conversations within PSE about potential gaps between industry needs and graduates. Additionally, there is considerable discussion within government (e.g., The Premier's Highly Skilled Workforce Expert Panel, 2016), organizations and post-secondary institutions about the role that work-integrated learning can play in developing graduate attributes and identifying talent for organizations.

Study 1: Exploration of Organizations' Talent Management

Purpose and Research Questions

The purpose of study 1 was twofold. First, it aims to describe organizations' perspectives regarding talent, including how they think about talent and what they are doing to manage it. Second, it seeks to understand how PSE can better support organizations' talent management programs. This study was guided by four research questions: *RQ1. What are HR professionals' perspectives on "talent"? RQ2. What sorts of factors influence these perspectives? RQ3. How might these perspectives be linked with organizations' talent management practices? RQ4. In*

what ways might universities and colleges support and improve organizations' talent

management practices?

Methodology

Data Collection

Participants were human resources (HR) professionals working in one of several organizations. All of the organizations invited to participate had hired at least one co-op student from the University of Waterloo co-op program in the past year. First, University of Waterloo staff members who liaise with employers nominated three organizations that might be interested in participating in the study. Email invitations were sent to all nominees. Participants were also recruited using convenience and snowball sampling procedures. Initial review of our interviewees showed a disproportionate number of large organizations with a good deal of resources and a long history of recruiting. To contrast that perspective, we specifically sought to recruit smaller organizations' HR professionals. We relied on key gatekeepers within the University of Waterloo community to connect us with individuals within smaller organizations, such as within the Waterloo start-up community.

All participants were invited to participate in an interview that would last between 30 and 45 minutes. The majority of interviews were conducted over the phone, but some were conducted in person. All interviews were recorded. Interviews were conducted in a semi-structured manner with the intention of comparing and linking responses to key questions both across participants and within participants. However, participants were also provided the freedom to venture in any avenue once a given question was posed. Table 1 summarizes participants in study 1.

Table 1.

Description of participants in study 1 (n = 18)

Code	Role	Years in Role	Organization Size	Industry
P1	Recruitment	3	Large	Data management
P2	Recruitment	2	Large	Computer hardware
P3	HR	3	Small	Software development
P4	HR	5	Medium	Manufacturing
P5	Engineer	6	Medium	Manufacturing
P6	HR	2	Medium	Engineering
P7	Executive	8	Small	Social development
P8	Management	[a]	Large	Government
P9	Recruitment	1	Large	Data management
P10	Recruitment	3	Large	Financial Services
P11	Executive	1	Small	Software development
P12	Recruitment	6	Large	Education
P13	Management	1	Small	Education
P14	Engineer	12	Large	Natural resources
P15	Executive	4	Small	Social development
P16	Recruitment	[a]	Large	Telecommunications
P17	Executive	6	Large	Financial Services
P18	Management	7	Small	Conservation and education

Notes. [a] = information not provided; org size determined through publicly available data and coded based on Stats Canada's program (small = <100 employees, medium = 100 to 499 employees, large = 500 or more employees)

All of the participants were involved in talent management in some way. Half (nine of 18) of the participants described themselves as human resources professionals and have some derivative of human resources represented in their job title. Just more than one third (seven of 18) of participants were managers or senior-level members of the organization (e.g., Chief Executive Officers) who were involved in human resources practices in some way. They performed duties such as creating human resources policies, or setting strategic directives for human resources. Two participants were professional engineers who directly oversaw aspects of talent management, including parts of the recruitment and hiring process, as well as supervision

and development of talent in the organization. Participants had an assortment of experience in their current roles, ranging from roughly one year of experience to over 12 years of experience.

The characteristics of the organizations represented in the sample were also diverse. Half (eight of 18) of the organizations were categorized as "large" (500 or more employees), while four were "medium" (between 100 and 499 employees) and one third (six of 18) were "small" (fewer than 100 employees). Several of the large organizations were commonly recognizable. They represented various industries including technology (e.g., data management, computer hardware and software design), post-secondary education, financial services, telecommunications, and departments of government. The medium sized organizations represented engineering firms only, one in the automotive manufacturing industry and another in consulting. The small organizations were diverse, representing four start-up companies (two in the general area of social development, one in education, and one in the area of software development for human resources), one conservation and education group, and one media software design organization. The majority of participating organizations were located in south western Ontario, with several located in Toronto, the Greater Toronto Area (GTA), and Ottawa. One organization was located in the state of New York, but was planning for an international expansion, potentially into the Canadian marketplace.

Interview Guide

Once formalities were conducted, participants were guided through four key areas. Participants first defined, described, and conceptualized "talent". They were prompted to provide descriptive terms that come to mind when they think about talent. Second, they were asked to identify talent management issues in their organization. Third, participants were asked to identify and describe the talent management practices employed by their organizations, including how

they were going about bringing talented people into the organization (e.g., "where do you find them?" and "how do you attract them?"). Fourth, participants were asked to identify and describe the role or roles that post-secondary education institutions might play in supporting their talent management strategies. If participants did not introduce the notion of work-integrated learning into this part of the conversation, we prompted them to do so and to discuss how forms of WIL such as co-op might help. At the end of the interview, participants were briefed about the general nature of the project, our intentions for using the data they had provided moving forward, and how they can stay involved in the project. We also provided ample opportunity for participants to provide any additional feedback.

Data Analyses

All audio recorded interviews were transcribed manually by a research assistant and checked by one of the main authors for accuracy. Research notes taken during the interviews were also digitized and kept for analysis. The first few interviews that were transcribed were analyzed by two researchers and a research assistant independently. Analyses involved a basic thematic coding procedure (see for example Aronson, 1995). The three individuals met to discuss their initial coding schemes. Schemes were compared, contrasted, and debated. The process was iterative and the data was frequently consulted. At the end of this meeting, an initial coding scheme was developed to represent data collected from the initial interviews. As subsequent interviews were analyzed, the initial coding scheme was consulted, and altered iteratively as appropriate to best reflect the data.

Findings

Interview data revealed themes in four key areas, problems, perspectives, practices, and preferences. Problems refers to the talent management related issues organizations faced.

Perspectives refers to definitions and descriptions of talent. Practices refers to organizations' strategies and efforts to recruit and develop talent. Preferences refers to participants suggestions and comments for PSE in support of organizations' talent management programs. Each is discussed below.

Problems

There were three overarching problems experienced by organizations in the study: changing landscapes, image problem, and resources problem. Each is described below.

(1) Changing Landscape. Changing landscapes refers to situations characterized by change which influenced talent management. The organizations (seven of 18) that experienced changing landscapes were a mix of small, medium, and large organizations that operated in diverse industries (e.g., education, manufacturing, and technology).

Though the common theme amongst these organizations was a change in situation, three distinct changes were mentioned. The first was retirements. Several participants stated that a key talent-related concern included retirements. Senior organizational members, employees and managerial staff, were retiring or planning to retire. This left a significant talent gap for organizations to fill. One HR manager working for a medium sized manufacturing organization (P4) spoke about the difficulty in filling the most senior talent gaps: "So because of the more senior workforce is obviously going to be retiring, we're finding that it is actually hard to replace those gaps because there's just not a high enrollment in those skilled trades overall." For this participant, skilled trades such as tool-and-die were in demand with senior tool-and-die makers retiring, but few individuals were studying in that trade locally, making it difficult to replace the talent.

The second change mentioned was growth. For some organizations, talent management challenges were linked with organizational growth. Many participants mentioned that their organizations were embarking on new directions, such as international expansion, or entry into a new market. These decisions were inherently linked with challenges regarding recruiting and developing top talent. For one large data management firm, additional talent was needed to successfully enter in international market: "I think we're going to be expanding internationally, so naturally hiring people outside of the [country] which isn't something that we've been doing extensively the past few years, but now we'll start to see that more and more, so really be you know, more global force, workforce, more mobile workforce is something that we'll probably see in the next few years" (P1).

The third change found in the study was increased competition. Several organizations reported that they were in constant competition to recruit and retain the most talented people. This was particularly the case when the sort of talent that was being recruited was closely linked with a particular set of skills (e.g., computer coding skills). In these cases, according to Participant 9: "candidates that have the right skillset have more options than ever before, and as an employer it becomes really integral that we're positioning ourselves and setting ourselves up for success to be able to compete against some of the other excellent attraction [sic] that other employers can offer, and these aren't just attractions like perks like lunches and bean bags chairs, all those sort of sexy little details that a start-up space can offer."

(2) Image Problem. The second problem that emerged involved potential candidates' perceptions of the organization as a good place to work. This problem was mentioned in almost half of all interviews. Each participant who experienced this problem spoke about the difficulties managing talent in an increasingly competitive environment especially with poor organizational

attractiveness. Further, these organizations mentioned that they struggled to compete with other companies (that had stronger organizational attractiveness) for similar types of talented people, particularly based on a set of skills. Organizations facing this problem were almost exclusively large companies representing areas of government, finance, telecommunications, and technology. The primary concern of these organizations was that they were not seen as fun, exciting, and innovative places to work.

This problem was reflected best in two quotes. Participant 2, who was a HR manager in a well-known multi-national computer hardware and software organization said: "[…] we need to become more innovative as an organization and keep up with the trends and make sure that our products and our services are advertised to some degree to students, to candidates externally, so that they see us an attractive employer." Participant 9, who also worked in a tech-based company, said that attractiveness was increasingly shaping recruitment: "it's going to become increasingly more essential to have current organizations that would be pushing out content and really shaping the perception of what the experience is like at an organization to be able to attract those people who can choose from so many different options."

(3) Resources Problem. The third problem mentioned in the study was a lack of resources that could be used to recruit, develop, and retain talented people. Five organizations mentioned experiencing this issue. Each participant in this segment spoke about the difficulties of achieving organizational goals were limited resources, which was complicated further by a restricted capacity to attract talented people. They spoke repeatedly about the sorts of talent practices (recruitment, development, retention) that they would like to implement, but are constrained and so do other things.

This problem of resources was particularly evident for smaller organizations, both during talent recruitment and talent development. Without sophisticated resources, employers' talent management practices were constrained. For example, a HR manager working for a small tech company said: "Because we're small and I don't have millions of dollars in resources to spend on fancy postings and tools and stuff, unfortunately I don't have that" (P3). This problem occurred during talent development, too. An executive of a small social enterprise mentioned that investing in training was essentially not an option because it was too costly: "… in my organization, time is money but then there's also an added cost to training people to give them those skills that they need" (P7).

Perspectives

There were three primary descriptions of talent that emerged in the study: work-readiness, potential, and self-direction. Figure 1 provides an overview of these descriptions, and each aspect of talent is described in detail below.
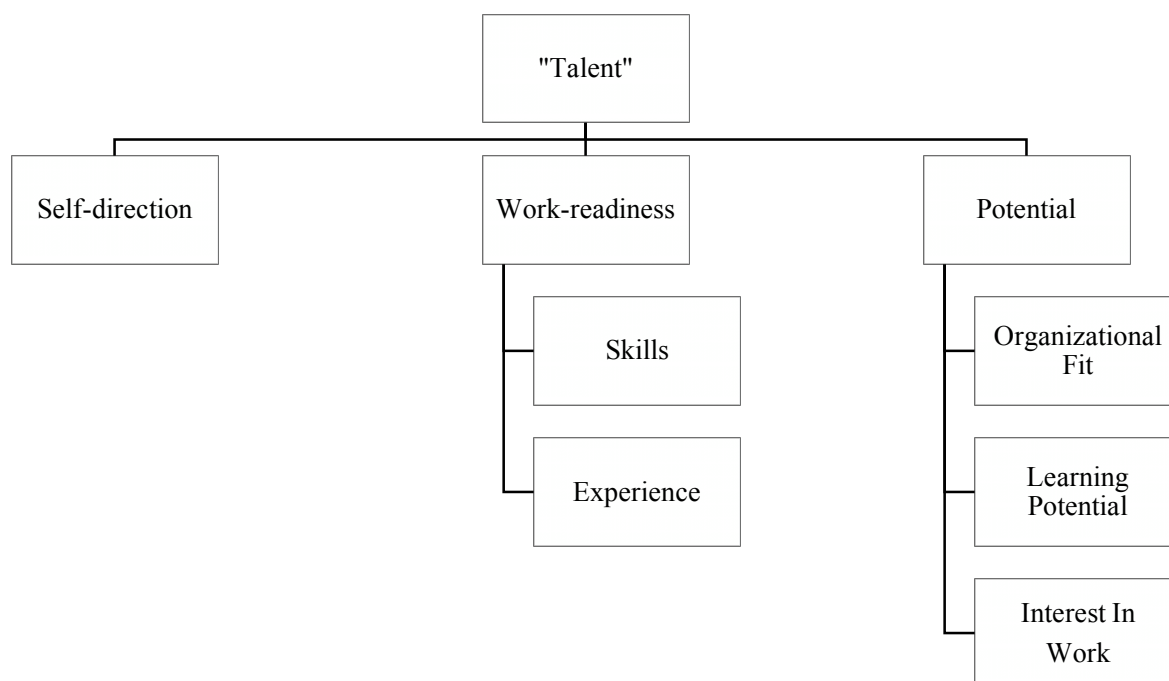
```
                              "Talent"
        ┌────────────────────────┼────────────────────────┐
   Self-direction          Work-readiness               Potential
                                 │                           │
                               Skills              Organizational Fit
                                 │                           │
                             Experience             Learning Potential
                                                             │
                                                       Interest In Work
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Figure 1. A model of talent as derived from data in study 1

(1) Work-readiness. First, talent was described in terms of work-readiness. Work-readiness refers to the degree to which an individual is ready for work, meaning that they require little additional training prior to making a contribution to the organization. Participants described work-ready individuals as having two attributes. First, work-ready individuals have *skills*. . Skills refers to a readily observable and measurable ability to successfully compete a given task. For example, several participants worked in tech companies, in which computer software "skills" such as coding in a particular language were desirable. The skill (coding) was very obvious. That is, candidates either possessed the skill or they did not. Participants were mentioned skills described talent as "the combination of skills and characteristics that would enable somebody to perform a necessary function, whatever that might be" (P7), and as "a very specific skillset […], the very specific set of individuals who have the requisite skills to be successful in an area where we may have a gap or a need to fill those roles" (P9). Several participants noted that skills were often a requisite but insufficient condition for being a successful candidate. Not having a particular skill automatically excluded someone from a candidate pool but possessing a particular skill seldom was associated directly with an offer of employment.

Second, work-ready individuals have previous experience. Previous experience was commonly mentioned as an important part of talent. One participant, the executive of a small start-up, said that talent is "[…] a combination of background and experience in terms of what people have already done or demonstrated that they can do in other roles" (P7). Participant 9, a member of a large data management company, speaking specifically about talented students, said that previous experiences were an indication of future performance: "So individuals who had sort of 2+ co-op terms ideally under their belts already, and we're looking for experiences ideally that are quite relevant to what we do, so experiences either with other start-ups locally or [elsewhere],

experiences working maybe in telecommunication space, working in the app development, all of those types of things would cause us to consider a candidate more favourably and group them in the top talent type category if you will" (P9).

(2) Potential. The second way that participants characterized talent was in terms of *potential.* Potential refers to the degree to which the organization believes that an individual can become a top performer in the organization at some later time, regardless of their work-readiness (see above for description of work-readiness). Individuals with potential had three attributes. The first was *interest in work*. Interest in work refers to the degree to which someone is genuinely interested in working for the organization. It means that someone identifies with the vision and mission of the organization and is committed to its cause. As participant 14 described, talent meant "[…] someone who is genuinely interested and interested in the area they're working in." Participant 10, who worked in a large financial services firm, said that interest was a useful condition to begin the recruitment process. This individual said that they would often use a conversation initiated by someone else as a sign of interest in the company, which would signal strong candidacy for recruitment. That is, rather than reaching out to determine whether someone might be interested in the organization and its work, participation 10 allowed others to present that interest first and then showcase other talents later.

The second attribute of potential was *organizational fit.* Organizational fit refers to a sense that a person belongs in an organization. It was one of the most often cited aspects of talent. Participant 18 described the importance of organizational fit in the following way: "The right fit is huge because if you don't fit the company, if you don't fit the company picture, or you don't fit with the staff, it becomes like if I hire someone who doesn't work well with my other staff, it kind of becomes a wasted effort you know we have to find the person who's gonna fit

well because if they fit well then we have success both for the individual, but also the

organization."

The third aspect of potential was *learning potential*. Learning potential refers to an

abstract description of the likelihood that a given individual could learn to be a top performer in

the organization. It was mentioned the most frequently of any other aspect of talent (14 out of 18

interviews) suggesting that it may be the most consistent dimension in organizations'

perspectives on talent. Several related terms, such as "mindset", and "potential" were offered,

but all of these reflected an ability and willingness to learn. Participant 18 described potential as

a "willingness to develop and to change and to learn and to expand, so it's those soft skills that

are so important when it comes to being able to develop the knowledge and apply it." An

executive in a small human resources software company, described talented people in the

following way: "Talented people can adapt very quickly, that they have high learning potential

… rather than measuring things like what you already know, what crystallized intelligence, you

are looking for things that show more fluid intelligence." (P11)

(3) Self-direction. Self-direction was mentioned is several instances as an aspect of

talent. Participants referred to self-direction in multiple ways, including an ability to adapt to

changes, such as new competition in the marketplace or with working with multiple personality

types at work. One participant described self-direction as "[…] figuring out what works, and

kind of like being ok with failing, but fixing it up from there" (P13). Thus, self-direction

involved pro-active problem solving, and trying to find novel solutions to problems without

being prompted to do so. Another participant described talented people in this way: "People who

have the ability to think, the ability to assess, to be flexible, to be responsive, to be good

communicators, those soft skills definitely become even more important I think in the workplace

then when I first graduated" (P18). This notion of being flexible and responsive to new

challenges, and adapting to change was clearly reflected in this individual's view on talent.

Associations between Problems and Perspectives. Based on interviews, we believed

that the extent to which these perspectives on talent were held by an organization would be

related to the talent management problems reported by participants. Having found that there were

overarching problems and three overarching perspectives regarding talent (work-ready, potential,

and self-direction), we looked to assess a potential relationship between problems and

perspectives. It could be that those organizations that experience specific talent management

issues think about talent in a particular way.

The frequency of each perspective was coded for each participant. Then, an average was

calculated for each group of participants based on the problems that they experienced. Scores

ranged from zero (i.e., no participants within a given problem group mentioned any aspect of a

given perspective on talent) to 1 (i.e., every participant within a given problem group mentioned

some aspect of a given perspective on talent. Table 2 shows the results of this analysis.

Table 2.

Likelihood of expressing a perspective on talent by talent management problem-based segments

Problems	Work-readiness	Potential	Self-Direction
1: Changing Landscapes	0.3	0.6	0.3
2: Image problem	0.5	0.6	0.3
3: Lacking resources	0.6	0.7	1.0

Note. Percentages represent the proportion of organizations in a segment that mentioned a given

perspective on talent

Results suggest that there may be a connection between talent management problems and

perspectives towards talent. Those organizations dealing with retirement issues, for example,

tend to describe talent in terms of "potential" – the extent to which a candidate is interested in the organization, fits in the organization, and shows a good deal of potential to learn new things. It is likely the case that these organizations experience talent gaps at the most senior levels of the talent pipeline. In interviews, participants noted difficulties in immediately replacing senior talent. Instead of finding immediate replacements these organizations may desire to fill the talent pipeline with individuals who have the potential to take senior positions at a later time.

Organizations that are dealing with image problems (e.g., seen as not being a "fun" place to work), which tend to be large and well-known organizations, are also looking for people who show high degrees of "potential". These organizations tend to have ample resources to train and grow talent once it is in the organization, but struggle to attract talented applicants. Thus, these organizations may recruit individuals who are passionate about the organization and who want to learn, and then provide these people with the tools they need to succeed.

Those organizations that lack talent management resources, which tend to be those organizations that are small (fewer than 50 employees), are the most broad in terms of their descriptions of talent – they describe talent with respect to all three perspectives. However, those organizations lacking resources place particular emphasis on self-direction, the ability to proactively and independently set goals and solve problems. Perhaps given their resources to train people with particular skills, they want to recruit people who are gifted in a particular skill set. Also, given the volatility of the start-up and small business worlds, employers likely experience a good deal of change, and want people who are adept at navigating through changes.

Practices

Participants identified several specific practices that their organizations had implemented to manage talent. The bulk of the conversation regarding talent management practices focused on

talent recruitment and talent development. Less information about talent retention was provided and so this set of practices is not discussed here.

(1) Recruitment Practices. Analysis of interview data revealed three general sets of practices that organizations had for recruiting talent: seeking work-readiness, building personal connections, and increasing capacity. Each is described below.

Seeking work-readiness. Seeking work-readiness referred to the practices associated with identifying and attracting to the organization individuals with the necessary skills and experiences to perform a given function on entry to the organization. Several practices helped to this end. First, recruiters used referrals to find talent. Five of 18 participants noted that their organizations used referrals programs to recruit new talent. Participant 1, who was a recruiter for a large data-management organization describe the company's referral program in the following way: "We have a really good program across the whole company that encourages referrals, people had former classmates, colleagues, and we're really looking for people that our employees know and can recommend and can speak from experience … [it's] a great way to find kinda pre-screened talent already, and our employees then naturally do a really good job about getting their contacts really excited about the company and can give them that kind of like internal perspective." Referrals helped to skip over several steps associated with identifying potentially talented people. By relying on the testimonials of existing staff, particularly when they are incentivized to refer strong talent, organization can find people who are "ready to go" (i.e., work ready) upon accepting a job offer.

Seeking work readiness also involved using more traditional forms of recruitment such as online job advertisements. Several participants also spoke about the use of online postings on publicly available electronic job boards. One participant captured the sentiments shared by other

participants in that online postings provide an easy, cost-effective, and wide-reaching strategy for advertising positions: "I don't have millions of dollars in resources … but I do use … places like Indeed and generally that does generate a good candidate pool" (P3).

In a similar way, organizations looking to find work-ready individuals relied heavily on LinkedIn. A third (6 of 18) of participating organizations stated that they were using the social media platform *LinkedIn* as a recruitment tool. While other online platforms were also mentioned, LinkedIn was a primary tool for several of these recruiters. They often mentioned using LinkedIn as part of a larger online presence within part of their talent management strategy. For example, Participant 2 said: "I think that one of the biggest areas is our candidate attraction strategy when it comes to our online presence, so for us in Canada, we've been leveraging social media tools quite a bit in order to really connect with candidates in a more intimate one-on- one capacity … through live chats whether that be on … LinkedIn … whether it be through answering notes on LinkedIn." (P2). This quote clearly reflects the use of LinkedIn as part of an online media strategy to build relationships with potential applicants.

Building personal connections. As mentioned, several organizations sought to improve their image amongst pools of qualified candidates who were not applying for open positions. These organizations adopted recruitment practices based on developing close relationships with candidates. The common purpose of these practices was to connect with potential applicants in a personal way so as to learn more about them and to showcase the organization. They used several methods to recruit based on a personal connection. First, they became involved in career fairs and information sessions. Three of 18 participants stated that their organization would participate in career fairs and information sessions as a recruitment practice. One participant from a large telecommunications company relished the opportunity to be a part of such an event.

They (P16) said: "Sometimes we'll have representatives from universities come to our job fairs and they just introduce themselves and let us know what they have available, stuff like that is fantastic, inviting us to if you guys have job fairs or some kind of alumni events, anything along those lines, any kind of relationship where we can be in contact … anything like that, just that relationship is fantastic because it gives us lots of opportunities to connect with people."

Second, organizations with image-related issues that sought to recruit based on a personal connection also relied on *internal resources*. In some cases, organizations struggled very much with recruiting external applicants because of a lack of interest in open positions. In this situation, several participants noted that they would "recruit" talent from their existing pool of human resources. Organizations' talent needs could occur at any level of the talent pipeline, from junior to senior levels. As more senior positions became open, talent was often mobilized from lower levels of the talent pipeline to more senior levels.

Finally, organizations attempting to build personal connections with potential applicants used *event sponsorship* as a recruitment method. Two organizations in this study, both large and in the tech sector, mentioned becoming involved in special events as a recruitment strategy. For these organizations, attaching their brand to events was a way of encouraging a positive attitude towards the organization in the minds of potential candidates. Participant 9 gave one example of sponsoring an event called a "hack-a-thon", in which several coders – those who write (type) computer code – would come together to compete, showcase skills, and solve computer coding problems: "Forging a perception of ourselves on the campus and making ourselves well known was really critical, so we would try to sponsor relevant hackathons or other coding events that were taking place, so we would sponsor [a major event] every year, we would sponsor like tech retreats was another big one, just make ourselves really well known" (P9).

This practice afforded an opportunity to associate the organizational brand with a novel, enjoyable experience. Potential applicants would then think more positively about the organization for sponsoring such "cool" events. Participating in events such as hack-a-thons provided organizations an additional benefit. That is, by sending recruiters to these events, organizations can assess the quality of potential applicants. Coders, for example, who demonstrated high levels of skill would present themselves and make talent identification easier for recruiters. Consequently, recruiters at these events could begin a dialogue between the individual and the organization that could form rapport and eventually encourage application behaviour. Participant 2 summarized the strategy in the following way: "Another one that we are looking more towards is doing less of the typical information session and more so hackathons, participating in sponsoring hackathons, industry conferences, so we've had a ton of success meeting students at those hackathons and industry conferences, case competitions because we like I said are getting to know the students more on an intimate basis and getting to see what their hard skills and soft skills look like before actually kinda jumping the gun and saying whether or not they're a good fit for the organization." (P2).

Increasing capacity. The third overarching recruitment strategy involved a multitude of recruitment methods that aimed at *increasing capacity*. While organizations facing image problems or dealing with a lack of resources had more targeted recruitment methods, organizations experiencing organizational growth and change sought to bring a good deal more talent into the organization. To do so, they used several of the methods that have been mentioned previously. They used online job ads and other electronic media (e.g., LinkedIn) to identify potentially talented applicants. They occasionally joined in career fairs. They also mentioned

moving more junior talent up the talent pipeline, and particularly into new product divisions or into new geographic areas, consistent with organizational growth.

In addition, organizations looking to increase capacity looked to third-party agencies to recruit talent such as "working centres" and "job banks". Including in examples of these organizations are those that, assist individuals who are typically unemployed and sometimes new to Canada, local YMCAs, and adult learning centres. In multiple cases, these third parties helped to reduce the effort associated with recruiting individuals in new geographic areas. Participant 16 said that their organization uses these strategies when recruiting for talent in more rural areas. Organizations such as the YMCA become pivotal parts of the community, and so act as conduits towards community members who might be seeking employment. Organizations can therefore position themselves within spaces in these organizations (e.g., community centres) to find talented people whom they might not otherwise reach.

An additional benefit of these organizations is that they afford a certain screening process as a low-cost. Working centres, according to participant 18, have staff members ("job developers") who essentially help to sort through candidates and curate matches. Participant 15 further stated that several individuals who have tremendous skill and are talented but may not have strong personal marketing skills (e.g., do not perform well in interviews) look to job banks for assistance. Thus, employers who go to job banks looking for talented people may be rewarded in doing so.

Work-integrated learning students and new graduates. All of the organizations in this study recruited talent from work-integrated learning (WIL) programs, and several also recruited new graduates. This pattern was an artefact of the participant recruitment strategy in study 1. Nevertheless, all participants spoke about how important WIL was to their recruitment plans.

Recruiting WIL students took several different forms. For some organizations, recruitment took place through formalized job posting programs that are organized by the post-secondary education institution. Virtually all of the participants in this study worked for an organization that had hired a student in this way, at least from the University of Waterloo where the study was conducted. However, several participants also mentioned that they kept in close contact with members of the university community such as professors and librarians (P13) who could be contacted to provide contact information for promising, talented students. Additional description of the ways in which employers are interacting with universities and colleges is provided later in this report.

(2) **Development Practices.** Participants in the study identified five strategies used by organizations to develop (e.g., enhance or advance) talent in the organization. These were labelled: planning and monitoring, challenging, in-house training, external training, and encouraging self-development. Each is described below.

Planning and monitoring. Participants' organizations often implemented specific programs with which they could monitor and track the talented development of its employees. These programs included performance reviews and formal feedback, which several participants (P6, P8, and P13) described as the pillars of talent development. Communication about performance was being used to improving talent, and continually reviewing and providing feedback on performance was integral to this process. Other programs involved short-term opportunities, such as job shadowing to learn about others' roles within the organization (P16), while others had long-term activities, such as setting long-term goals. Participant 17 describes such long-term oriented activities as such: "development planning is really more aspiration-

based, okay I wanna do XYZ job in the future, okay what are the gaps that I have that I need to get to that, and how do I start filling them?" (P17).

Challenging. Some participants said that their organizations' strategy for talent development included pushing employees to perform at peak levels, thus encouraging the development of talent, by presenting new challenges. For example, participant 1 (tech company) said that software developers in their organization had opportunities to work more closely with business developers, despite being somewhat beyond the scope of their roles, in order to get a clearer picture of the organizations' practices as a whole.

Much of the philosophy underlying this turn towards presenting new challenges seems to involve providing autonomy to employees. Particularly with reference to students, participants (P13, P18) referenced that providing employees (students) with the freedom to conduct their work in a way that they think is best, and setting clear goals improves an expression of talent (performance) and actually also serves as a talent retention strategy, too. Participant 18, in particular spoke about giving employees "the chance to take ownership and develop something that's theirs" as an effective way of encouraging the development of talent in the organization.

In-house training. In-house training encompasses all of the formal and informal learning opportunities that organizations were providing directly to their employees with the intention of fostering skills, knowledge, abilities, and experiences in the talent pipeline. Some of these training opportunities were very low-cost, including a curated package on online materials and other resources that were related to specific tasks (P3). Other examples included more resource intensive workshops, which tended to be described as not mandatory, or "brown bag lunches" that, again, were not mandatory but supplemented on-the-job training.

External training. Several organizations also offered employees the opportunity to participate in external training, that is training offered outside of the organization. Participant 9 (in a large tech company) for example mentioned that individuals in the organization were taking advantage of a leadership training program offered by a local business hub. Some organizations, such as a small tech company (P11), would take employees to events (e.g., conferences, talking engagements) hosted by others as a form of professional development.

In one case, an organization (P4 and P5) had trouble replacing skilled labourers who were about to retire. Instead of recruiting externally, they looked to junior members of the talent pipeline who showed promise but lacked specific skills, and trained those individuals to reposition them in the talent pipeline. In this case, and in one other (P17), the organization paid entirely for individuals to become certified in a specific trade, representing an extreme case of external training for talent development.

Encouraging. Organizations often mentioned encouraging employees to develop their own talent, both at work (i.e., during work hours) and outside of it. Participant 15 for example said: "I encourage them to do as much research they need to feel confident in whatever tasks I'm assigning them that you know they need to watch YouTube videos, or read some blogs or articles … I expect them to kind of do it on their own time." (P15). Participant 11 similarly stated that many of the employees in their organization were "quite curious" and so tended to do their own readings outside of work, which helped to develop knowledge, skills, and abilities. This approach to talent development was low-cost – it was essentially free – and according to participants was effective at helping employees to address work-related problems.

Talent Management Problems, Recruitment, and Development. A general review of the data suggested that the talent management problems, as well as the perspectives towards

talent, were linked with the talent recruitment and talent development practices implemented within organizations. For instance, participant 5 said that they invest a great deal of resources into training and development because they are looking for candidates with strong *fit* and commitment to the organization. By investing, they hoped that employees would return in-kind by developing a bond with the organization and remaining within it. Participant 4 also mentioned that their organization sourced talent internally because there was often a lack of available talent outside of the organization. These examples suggest that the problems faced by organizations might impact their strategies for recruiting and developing talent.

Figure 2 shows a general pattern of recruitment methods in relation to talent management problems. The results suggest that the likelihood with which each organization relies on specific talent management practices may be linked with the problems that they face. For example, organizations that report a lack of resources with which to recruit talented people seem to rely more heavily on low-cost recruitment tools, such as job banks, than their better-off peer organizations. Conversely, resource-intensive strategies, such as sponsoring events and participating in fairs is less of a problem for larger organizations who are trying to combat image-related problems.
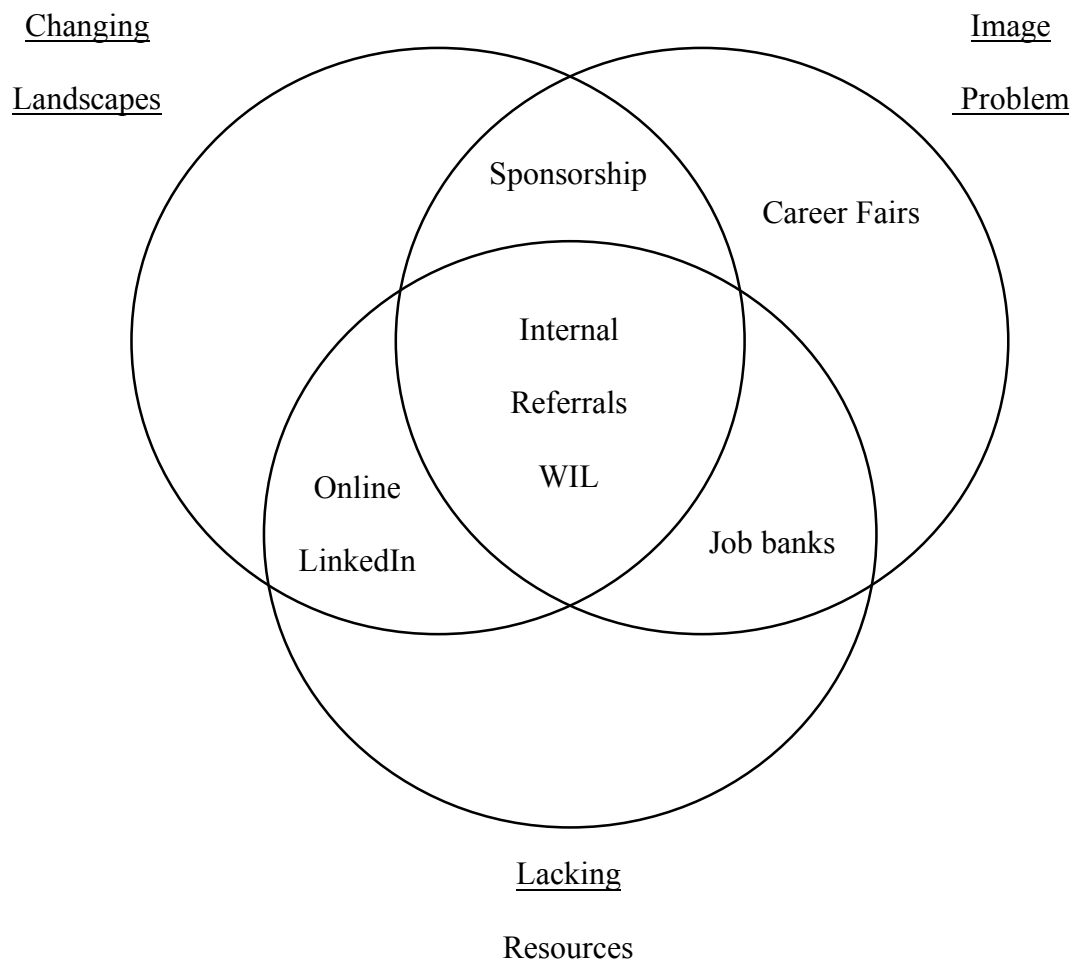
Changing

Landscapes

Image

 Problem

Sponsorship

Career Fairs

Internal

Referrals

WIL

Online

LinkedIn

Job banks

Lacking

Resources

Figure 2. Use of eight recruitment practices grouped by organizations' problem-based segments

Results also suggest that development practices may differ between organizations.

Organizations that report image issues take more seriously the practices involves in planning

movement throughout the talent pipeline, while smaller organizations do not prioritize these

practices as much. Encouraging self-development is of primary concern to smaller organizations

but less important to organizations with substantial resources who might offer in-house training.

Together, these basic analyses suggest that the characteristics of organizations, and the current

issues they are dealing with, not only shape their views towards talent but also influence how

they go about recruiting and developing talent within the organization.

Preferences

In the final area of the interview, participants were asked to speak about how universities and colleges might better support their talent management needs and practices (i.e., their *preferences* for relationships with PSE). The overarching theme was one of alignment. Employers wanted to see a greater alignment between PSE and their needs. As has been covered earlier, organizations face several challenges (e.g., retirements, lack of resources to recruit talented people) and they hoped for more support from PSE in overcoming these challenges. The answer to the problem ultimately involved a deeper connection and increased coordination between organizational practices and the education system.

While several comments were provided, the key strategy nominated by participants involved university-wide experiential education (EE). Participants spoke about using EE to align PSE with their talent needs in two ways. The first involved work-integrated learning (WIL). The second involved other forms of EE such as classroom-based EE. Participants' points regarding each aspect of EE are outlined below.

Work-Integrated Learning. Participants offered several comments regarding processes that might support that alignment. The most commonly reported theme involved work-integrated learning (WIL). According to participants, WIL programs solved several talent management problems. First, it helped to better prepare students – an important source of talent – to perform well in the workplace. Participant 16 said of WIL: "it's not just you know in theory what you're learning, you actually have some experience behind it whether it's some kind of co-op placement or some kind of like actual on hand experience, that's something that definitely helps us a lot especially when you're getting into more serious roles, if it's preparing them, that's an awesome aspect."

Talent identification and recruitment. WIL also helped organizations to access talent that they otherwise would not have access to. WIL provided a context in which talent could be identified. Supported by a university-wide system housed at an institution, organizations knew where to go to seek out talent. WIL promoted the availability of talent and made recruiting talent easier for these organizations. In addition to talent identification, WIL also helped in that organizations may have had more power to recruit students who were not yet graduates. Organizations that lacked resources to recruit established professionals relied on WIL to recruit talented students with particular skill sets who could be hired for less remuneration and a shorter term commitment than a more senior peer.

In another way, organizations that sought to recruit talent based on a commitment to the organization also benefitted from WIL. Often these organizations looked to WIL (co-op in particular) to recruit students over multiple work terms, making increasingly substantial investments in students over time. The strategy for these organizations was to support students' growth and development in such a way that not only promoted skills but also fostered a deep student-organization bond. That way, upon graduation, students could make seamless transitions into the organization and remain there for an extended period.

For these organizations, WIL acted as a *try-before-you-buy* relationship. It allowed organizations and students to test the "fit" with one another to see if a long-term bond might form. Participant 6 put this opportunity in the following words: "The co-op programs are essentially our regular lifeblood. It allows us to bring in students on a regular basis, once every term, uh, if we're working with other universities, sometimes they have a longer work term so they can do 8 month or 12 month work terms, and it really allows not just us to see if it's a good fit and that they have the competencies, the soft skills, to be successful, but it also allows that

individual to see if a consulting engineering term of our size is what they're looking for, and it's just a really long interview that works for both sides."

Supporting WIL success. Participants commented that several aspects of WIL made it successful. The two most prominent comments included dedicated staff and centralized systems. Participants noted that having dedicated staff on campus to check-in with the organization removed several challenges associated with participating in WIL. Participant 4 mentioned that co-op was a desirable recruitment pool for their organization because they had a personalized service, provided by staff members, that could address problems as they arise: "Anytime I've got an issue or question or I'm not sure I did something right, she replies to me so quickly, like the service that your university's provided to ensure that bringing a co-op into our company is smooth and as effortless as possible. Waterloo's program is head and shoulders above every other program that I've had to work with." With competent and committed staff members, WIL programs can better support the talent management strategies and practices employed by several organizations.

Participants also mentioned the benefits they saw from a centralized WIL program. At the University of Waterloo, the context for this study, co-op positions are advertised and managed through a centralized program. That is, all students applying for co-op jobs, regardless of their program affiliation, apply through one system. Employers of all types of characteristics enjoyed the ease of participating in co-op through a centralized system. Participant 15 said the following: "but institution-wise and as University of Waterloo I have reached out to them with doing some stuff but even at [another PSE institution], it's pulling teeth, it's very hard to find, it's very, [they have] no like in their interns program its very each individual program within each, like the media program within the advertising and marketing or you know basically has their own person

and they don't talk to each other so it's literally going to 20 different programs in order to figure out what their interns are and what they're doing and if you can get one." Instead of communicating directly with multiple staff members at an institution, each responsible for students in a specific program, employers were able to communicate with a central system responsible for the applications from all students, across all programs.

Improving WIL. There were a few things participants believed could be done better. One participant believed that universities should do more to promote the benefits of participating in WIL to those employers who are not already hiring WIL students. One participant (P18) said that this is particularly the case for smaller organizations who perhaps do not consider themselves an appropriate candidate for hiring co-op students. Another participant offered the following: "Uhm I think there's a lot of social, there's a lot of businesses out there that have no clue that the possibility or realm of getting additional support or help is even out there and if they did know you would not have enough students to fill the needs […]" (p15). Indeed, there is potential for co-op programs to further flourish by extending a benefits-based message to potential employers.

Other Experiential Education. Apart from WIL, there were suggestions made for how alignment might occur using other forms of experiential education (EE). Participants noted that in-class EE could support the development of talented students and that this support would be important in contexts were WIL was not widely offered. Participant 2 said: "we've just had so much great success with having, uhm, you know, both the coursework to compliment the co-op and vice versa, but if you were to remove that piece, uh, I definitely think that there would be, there would need to be a lot more hands on, uhm, more of a hands on approach in the, in the classroom for students to really, uh, better enhance their skills so that they are ready for the real working world once they graduate". According to participants, students who had EE were better

prepared to contribute at work. Compared to students who did not have experiential education, it was presumed that students with experiential education opportunities were better prepared to perform at work.

In-class involvement. Participants commented that they would like to see a greater representation of organizations' challenges and needs in university curricula. They offered that contextualizing students' education in terms of organizations' experiences would greatly help organizations. This notion appears to have two parts. First, participants hoped that students would have opportunities to connect theory with organizations' definitions of "problems". Becoming involved in the classroom might allow organizations to guide the transfer of knowledge from the classroom to work in a way that is more closely aligned with organizations' interests. Second, involvement in the classroom might allow the organizations an outreach or branding opportunity with students. Deeper involvement in class activity might help organizations to reposition their brand in students' minds such that they increase organizational attractiveness. Thus, becoming involved in class might serve as a recruitment strategy for several organizations.

Participants offered examples of what their involvement could look like. Several participants suggested that they would enjoy giving guest lectures or presenting case studies in classrooms. For example, participant 1 said:

"some universities and schools do have these kind of, uhm, I don't want to call them consulting, but you basically are, you know, given a business challenge and work with, you know, people from that company to to try to figure out solutions, just kind of getting them, I think the more experience that students can get to, you know, some actual real world assignments, working in teams, you know, that

would better prepare them, I think some schools do a really great job at this, some

programs I think others are kind of, you know, falling behind a bit but I think the

more universities do to really help the students build that collaboration and team

work and also think about it from like a real world business perspective, you

know, that would help them get better prepared."

This appeared to be linked to a talent management strategy that included exposing students to the

employer's brand early and often. Again, by being involved in the classroom, employers can

build a more positive association between theoretical knowledge and practical problems. This, it

may be, increases the attraction of the organization. This practice may also have the benefit of

allowing organizations early access to identifying and tracking talented students. Before other

organizations have an opportunity to entice students, those organizations "in" the classroom have

a unique opportunity to build intimate connections with students.

In a similar fashion, participants described a desire to be involved in educational

experiences beyond the traditional classroom. They mentioned that they would love to be

included in experiences in which students showcase their talent. One participant said: "I would

suggest affording us opportunities to meet or experience um you know University of Waterloo

talent so I'm not sure what that looks like but let's say there's uh a cool robotics event where the

students build robots that, I don't know, play basketball, I'm spit-balling, is there an opportunity

to invite the employers in the area where you know we can see or rather you're showcasing the

great talent that exists at the University of Waterloo" (P11). Presumably, these experiences not

only generate ideas for organizations but also help organizations to identify potential sources of

talent in the long-run. In sum, several organizations appear to be ready, willing, and able to take

a larger share of educational experiences in order to connect with talented students.

Expanding the EE and WIL community. Several participants spoke about "third-parties" in creating alignment between universities and organizations' needs. Community organizations such as the YMCA were relied upon by some businesses as pools of talent, or as mechanisms to leverage recruitment efforts. Other organizations spoke about high schools as places where talented students were being identified and recruited. Other third-party spaces like community technology hubs and other talent development agencies were also frequently mentioned.

Together, these comments suggest that there is an opportunity for a more integrated network of organizations that supports employers' talent management. Universities for example might identify students who have previously been flagged by employers, and then position themselves as training hubs for such students who already have promising job outcomes. Third-spaces could work together with universities to better identify the sorts of talented people that industry needs and then help to make appropriate connections between businesses and talented job seekers. Universities could make stronger connections with organizations that do not have the resources to develop talent internally by further promoting their continuing and extended learning programs.

The success of such a third-party space might be further supported through WIL. According to one participant:

> "It'd be great to see the university getting more involved in these grassroots organizations in a collaborative way, acting as a catalyst to actually bring people together in a common area. So for example there's universities and places in the States that are kind of at the hub where you can have all these you know naturopathic doctors you know they're thrown out to the world to be their own

entrepreneur if they work on their own they have their own everything right they

do their sales, marketing, but they're not really taught any of that stuff. Having a

single unit or entity that could oversee and say hey we can provide a steady flow

of co-op students that will work on sales and marketing, they'll get the ads, they'll

get the experienced, and these 2 co-op students will work you know they will

always have 2 co-op students in that building for a year right and they provide

sales and marketing expertise or knowledge or support for 15 naturopaths, right so

they will go on and do all the social media networks and will go on and do sales

calls or RPN or the budgeting mean you know what I mean" (P15).

This participant had a clear vision for how co-op might support the alignment of education and

business. Universities and colleges produce talented people who might have interests in small

business. The businesses' performance could be supported by co-op students who also have an

interest in that world, and so there might be opportunity for mutual benefit.

Articulating Talent. One piece of alignment that was much smaller in scale involved a

communication gap. Several participants said that they struggle to find the right talent because

potential applicants either fail to showcase their talents in appropriate ways or because applicants

misunderstand the sorts of talents that organizations seek to obtain. Aligning employers' talent

needs with students' actual talent and expressions of that talent might therefore be an important

step in solving some talent management challenges, particularly those related to recruitment.

This problem appears to stem from a relative lack of awareness on the part of the student.

According to participants, students are sometimes unaware of the talents (including skills) that

they can offer to employers. According to one participant: "I was at [a university] three weeks

ago at their political science department and they're struggling because they don't have a co-op

program so the reality is students coming out of some disciplines going 'I have no skills', and I think as soon as you say that there's a problem and I think the educational institutions have a responsibility to help the students understand that they actually have skills they just don't see them […] everyone has those skills, but they don't see it as skills, they just see it as school" (P10). PSE might intervene in the process by encouraging a reflection process through which students become more aware of their abilities.

A potential solution to this problem, as offered by one participant (P18) involves a more streamlined approach to professional development:

"I think honestly, the best thing that universities and colleges can do is prepare

people better for the workplace for the whole like application process like I wish

all students regardless of whether they were co-op students or not got sort of the

co-op drill that I got when I went to school about you know interviewing, job,

transitioning into the workplace, how to do good résumés, cover letters, how to

work within you know the workplace, you know what do you do if you think that

such and such is happening or harassment or that sort of thing, I think a lot of

people especially younger students are very vulnerable in the workplace if they

don't understand what you know what the supports are within a good work

environment and what their rights are, as a staff member, and how to be sort of

face but also how to be treated with respect and that sort of thing…if there was

like the you know 'Work 101' that everybody had to take before they graduate."

By offering course across PSE, regardless of other participation in experiential education and work-integrated learning, students may benefit from a more targeted work-specific education.

Critical voice. One final suggestion was made regarding universities and colleges in support of talent management. That was that PSE institutions should not entirely cater to the needs of industry. Several participants noted that PSE has a responsibility to produce engaged citizens. There should be a focus on educating the "whole person" who is successful in several areas of life, not only in the context of work. Thus, participants warned about allowing industry to set the direction for educational practices. Instead, there should be a mutual discussion between industry and educators regarding the sorts of education that best produce successful graduates who are "talented" from employers' perspectives (P11).

Furthermore, one participant noted that a primary function of universities has always been to comment on the practices of society. This participant suggested that universities in particular can act as a constructively critical voice in commenting on organizations' talent management practices. PSE can add value to the conversation about talent management by providing questions regarding how and why organizations do what they do.

Discussion

This discussion section returns to the four questions posed at the onset of study 1 in an effort to summarize the study and its findings.

RQ1. What are the HR professionals' perspectives on "talent"?

Our data suggest that human resources professionals think of talent as a multi-dimensional concept. First, participants described talent in terms of how work-ready someone is. Work readiness was described in terms of skills, experience, and leadership. The picture that was presented about work-ready talent was that it required little instructional support. People with work-readiness understand their tasks and execute them effectively. Second, talent involves potential, which refers to a dormant talent that, with support, could be leveraged for exceptional

performance. Potential involved a long-term orientation to building a relationship with the organization, and an authentic passion for working in the organization. Third, talent involved self-direction. Self-direction referred to a readiness and willingness to improve, to learn, and to solve problems in creative and innovative ways.

These perspectives mimic other concepts presented previously in the literature. Work-readiness has been a topic of conversation amongst researchers for some time, and several approaches to its conceptualization and measurement have been taken (e.g., Caballero & Walker, 2010). Work-readiness is also a topic that has become highly relevant to policy makers and those involved in the government of PSE (see The Premier's Highly Skilled Workforce Expert Panel, 2016). The concept of self-direction also has a considerable history in the literature. Foundational literature provided by Candy (1991), and Guglielmino (1978) provide a basis on which to discuss this aspect of talent. Self-direction involves a process in which learners take initiative for their own learning experiences. Self-directed learners tend to set their own learning goals, and come up with a plan to advance their understanding of topics even when they aren't prompted to do so. Both work-readiness and self-direction are intuitively desirable candidate attributes.

The notion of potential is far less explored. However, its constituent parts have received considerable attention. Interest has been discussed with a multiple of related terms, including passion, buy-in, identification, engagement, connection, and so forth. Each of these terms has its own line of related research. Consistent across these lines is the finding that deeper interest in work is associated with superior performance. Saks (2006) for instance demonstrated that employees who are more engaged in their work (at both a job level at organizational level) demonstrate higher performance relative to their peers. Those employees who are very "into"

their jobs and their organizations also tend to be more satisfied and have a stronger relationship with their employer.

RQ2. What sorts of factors influence these perspectives?

Data collected in this study suggest that participants' perspectives towards talent are impacted by organizational talent management problems. Issues pertaining to talent management may guide HR professionals' views towards talent. We identified three main talent problems: changing landscapes (characterized by organizational growth and competition for talent), image problems (which refer to poor branding and low power to recruit talent), and resource problems (meaning the organization has few resources to recruit and develop talent). Organizations that are experiencing growth and development tend to discuss talent in terms of a potential to contribute to the organization. Under this condition, organizations appear to have a longer-term orientation to understanding talent, and want to gather talent based on an ability to mobilize individuals throughout the talent pipeline over a long-term schedule. Similarly, those organizations that struggle to recruit top talent based on an image problem also conceptualize talent with a longer-term lens. They describe talented people as those who are very much connected to the organizations' mission, vision, and values. While they also often discussed aspects of work-readiness, recruiters and other professionals in organizations facing image issues are looking for people who are committed to the goals of the organization.

Conversely, organizations that lack resources have an entirely different view about talent. Importantly, they are more demanding of talent and are more likely than organizations facing other sorts of issues to express several aspects of talent. This is likely due to the added importance of recruiting the right talent in smaller, resource-poor organizations. In these cases, there is no margin for error, and recovering from hiring the wrong person may not be possible.

Organizations with few resources also have little support for developing talent, which may explain why aspects of work-readiness and self-direction were so frequently mentioned by participants in smaller organizations. Owners and operators of start-up organizations may have significant pressures placed on them and may not have time or energy to direct new employees' performance. Instead, they require new employees to be self-managing and "work ready". It appears integral to the success of these organizations that talented people make significant contributions by setting their own goals and carrying performance forward under conditions of little supervision.

RQ3. How might these perspectives be linked with organizations' talent management practices?

A reading of the data suggests that how organizations think about talent, which is in part driven by the talent challenges that they face, is connected to how they go about managing talent. Both recruitment and development practices seem to be tied to these underlying perspectives and problems. Organizations that face image problems for example think about talent in terms of commitment and interest. They therefore try to recruit people who demonstrate commitment and interest. To do so, they look to build personal relationships with candidates to get a fuller sense of them than could be possible on a formal application package. These organizations invest heavily in talent training and development so as to strengthen the bond between employee and organization. This investment reinforces commitment to the organization and has practical benefit for the performance of the individual in the organization.

Smaller organizations, making their way with few resources, think about talent in terms of self-direction. They use several recruitment methods, none of which are particularly unique to their situation, to amplify their recruitment power. That is, they use several low-cost methods

such as online job advertisements and third-party job boards to spread a message about open positions quickly and often. They tend to look for people who are ready to contribute and can do so with little supervision, and so they look for evidence of past performance and education which would support the performance of several concrete tasks. Once in a resource-poor organization, talented people are more likely to receive encouragement to develop their own talents, rather than to receive formal training.

Other organizations that are growing and expanding tend to experience talent gaps also at the most senior levels of the talent pipeline. They replace those gaps with more junior talent, which is also mobilized into new veins of the organization (e.g., new geographic regions, new product/service lines). These organizations seek more people, particularly those who care about the organization's direction. These organizations often have the requisite resources to train people to become top performers and so are less concerned with work-readiness. Instead, they recruit based on a demonstrated interest in the organization, and then train recruits up-to-speed using both internal and external development opportunities.

RQ4. In what ways might universities and colleges support and improve organizations' talent management practices?

Developing talented people. Interviews revealed several opportunities for the ways in which universities and colleges can support organizations' talent management practices. The first is to *develop talented people*. Participants' comments revealed a multidimensional conceptualization of talent. This conceptualization could be incorporated into teaching and learning plans within PSE. Several of the aspects of talent mentioned in this study are reflected within the WIL pedagogy incorporated at the University of Waterloo where the study was conducted. Supervisors during co-op work terms are given the opportunity to evaluate students'

performance based on attributes such as *interest in work* which clearly overlap with attributes of

talent identified here. Giving feedback about performance on those attributes can highlight for

students not only how they are contributing to the organization but how their understanding and

expression of talent progresses over time. PSE could continue to implement teaching and

learning practices that foster the development of these aspects of talent.

It is evident that forms of WIL such as co-op can play a fundamental role in this

development. The WIL literature suggests that participation in WIL could contribute to the

development of students' multi-dimensional talent. Authors such as Bandaranaike and Willison

(2015) note that WIL experiences can contribute positively to affective aspects of talent. These

aspects, such as feelings towards the employer, can be just as important as cognitive aspects such

as task understanding in predicting employees' performance.

In one recent study, Redden (2017) administered the self-reported work readiness scale,

developed by the Office for Learning and Teaching in the Australian government, before and

after an exercise science work term. Compared to pre-work term scores, students reported

significantly higher work readiness after the work term. Moreover, students identified the work

experience more so than related course work than the cause of these changes. This finding

suggests that students feel more prepared to succeed at work through WIL experiences.

A study by Pennaforte and Pretti (2015) also suggested that participation in co-op

contributes to students' commitment to the organization. As students socialize into the

workplace, receiving support from the organization, they may begin to develop a strong bond

with the organization. This bond can be an important predictor of the duration of quality of the

employment relationship. In several instances, this bond can persist even past students'

graduation date into a full-time employment opportunity (Hurst, Good, & Gardner, 2012). In this

way, co-op may help organizations to recruit only once but hire twice (Wanders & Hubbard, 2017). Thus, co-op can not only develop talent, but it can serve as a means of reducing talent management costs.

Linking talent with talent gaps. Apart from developing talented people, recommendations from participants also included university and colleges linking talented people with available positions. Fundamentally, this seems to involve experiential education (EE). Participants noted that providing students with several EE opportunities, ranging from in-class to extra-curricular experiences, helps to bridge talented people with organizations' needs.

Participants highlighted two mechanisms through which these links could be made. First, employers' interests could be more explicitly represented in the classroom. Participants talked about case studies and business challenges as being opportunities to align students' in-class experiential learning opportunities with organizations' challenges. Some participants were even more involved in their recommendations, as they suggested opportunities for direct involvement by way of guest lectures and other sorts of presentations. By becoming more present in the classroom, participants believed they could make a stronger link with students. Doing so, according to those who participated in the study, would help to showcase for students what is important (i.e., organizations' interests) and would also increase students' awareness of employment opportunities within the organization.

Participants also suggested that there was more opportunity to link students and employment opportunities outside of the classroom. Several programs offer extra-curricular EE opportunities. One common example is student research colloquiums in which students showcase findings and implications from research projects. Participants in this study showed a high level of interest in becoming involved in such events. At least two participants mentioned that they

have sponsored similar events in the past. These occasions bring talented students and employers seeking talented students together. They provide what one participant in study 1 referred to as a collision opportunity; both parties learn about the other and showcase their value in close interaction.

Together, this discussion suggests opportunity to strengthen the connection amongst relevant stakeholders for the benefit of all. WIL may play an important role in bringing partners into a common conversation. Authors have commented on the notion that employability and graduate outcomes can be enhanced and supported simultaneously by industry, education, and government stakeholders (e.g., Henderson & Trede, 2017). More and closer connections with industry partners might align students' learning experiences with the specific needs of industry. Organizations appear to be ready, willing, and able to hire students and graduates with such attributes because they help to solve organizations' challenges and contribute to their success.

Study 2: Examination of Employers' Co-op Job Advertisements

Purpose and Research Questions

Study 1 explored at a macro-level the practices used by organizations to recruit and develop talent in the talent pipeline. Particular emphasis in conversation with participants was related to talent recruitment. Additional emphasis was also given to work-integrated learning, specifically co-op. In several co-op programs, and certainly at the University of Waterloo where this study was conducted, co-op recruitment is centred on the co-op job advertisement. Organizations place an advertisement into a centralized system and students choose whether to apply to that job or not.

Previously, there have not been attempts at understanding general patterns in these advertisements. The purpose of this study was twofold. First, we sought to understand how the

content of job advertisements, operationalized in terms of key words and phrases, have changed in the past decade. By comparing organizations' recent job advertisements to job advertisements from years past, we can discern what aspect of talent are consistently sought, which have fallen out of favour, and which have emerged. Second, this study seeks to determine whether there are certain aspects of talent expressed in job advertisements which resonate more clearly with co-op student job seekers. By comparing key words and phrases in those jobs that receive the most applications and those jobs that receive the fewest, we can explore which aspects of talent are connected to students' actual application behaviours. Thus, this study is guided by two research questions: *RQ1. How have expressions of talent in co-op job advertisements changed over the past 10 years? RQ2. Are there differences in terms of expressions of talent in co-op job advertisements between the most applied to and least applied to positions?*

Methodology

Data extracted from three programs were selected as samples for analyses. Those programs were computer science, financial management, and mechanical engineering. All three programs are part of a larger STEM field which has been highly endorsed by several levels of Canadian government of late. Media reports and anecdotal observation suggest that additional resources are being mobilized to develop highly talented graduates in these and similar programs. Thus, we wondered how employers were going about advertising positions to students studying these subjects and how those advertisements might have changed over the last decade.

Advertisements posted in 2004 and in 2014 were extracted for comparison.

To know which skills are popular/important in each industry, a parser followed by a text-mining methodology was employed. As the job descriptions were stored as free text, a parser that

could recognize and extract skill-like words from them was developed. A sample job description

is provided below (Figure 3).

Figure 3. Example job advertisement

As seen above, a job description contains a lot of other information apart from skills that

would be required to complete the job. Thus, apart from removing structural components, the

parser also removes various other text components.

Many text-mining concepts were applied, taking an iterative approach to build the parser

to its current precision. After the parser could extract relevant words from a job description, a

text mining methodology called *TFIDF* was employed to rank the importance of skills in each

industry. The methodology has two components: (a) the term frequency (abbreviated as TF), and

(b) the inverse document frequency (abbreviated as IDF). Term Frequency of every term/word is

the number of job descriptions that have the particular word. This keeps track of the popularity

of the word in every industry and thus changes with different sets of job descriptions e.g.

Computers Science vs. Finance job descriptions will have different counts of the programming

language "java".

Inverse Document Frequency of a word captures how rare the word is in our vocabulary

of skills; it is calculated as:

$$IDF = \log \frac{\text{total number of job descriptions used to create the vocabulary}}{\text{number of job descriptions that contain that word}}$$

In turn, the skills that occur a lot of times in the vocabulary are considered common and have a

lower IDF / importance. The skills that occur very few times in the entire job description

database are considered unique and are therefore very highly weighted.

Finally, the TF and IDF for every term is multiplied to understand the importance of a

particular rare/common skill in an industry and the words are ranked according to their TFIDF

scores. TFIDF scores are used in ranking instead of the TF or the IDF score alone as it captures

the importance/popularity of that skill in general as well as in that particular industry (or any set

of job descriptions).

Results

Table 3 shows the 25 most frequently occurring words and phrases in 2004 and 2014 for

each of the three programs of interest (computer science, financial management, and mechanical

engineering). Results of this exploration revealed few changes in job advertisements across the

10 year period. Those words and phrases that were included as most common in job

advertisements in 2004 were relatively present in 2014. This suggests that organizations

descriptions of desirable talent have not changed dramatically over the course of this sample 10

year period. This analysis helps to reveal what are perhaps the key functions of students from these programs who go on to fill co-op jobs.

Table 3.

Comparison of frequently occurring words and phrases in 2014 for job ads from three programs

Computer Science (15 of 25 match)			Financial Management (14 of 25 match)			Mechanical Engineering (18 of 25 match)	
2004	2014		2004	2014		2004	2014
Java	Java		Actuari	Financi		Mechan	Mechan
C++	Code		Account	Account		Manufactur	Manufactur
Softwar	Web		Financi	Tax		Engin	Equip
Web	C++		Tax	Financ		Equip	Assembl
Sql	Javascript		Audit	Audit		Draw	Electr
Server	Platform		Busi	Busi		Assembl	Engin
Tool	Feature		Client	Client		Electr	Cad
Solut	Mobil		Insur	Invest		Automot	Automot
Code	Server		Benefit	Risk		Plant	Solidwork
Unix	Oop		Manag	Analyt		Autocad	Test
Test	User		Servic	Offic		Cad	Draw
Applic	Softwar		Price	Servic		Machin	Machin
Html	C		Valuat	Riskmanag		Industri	Supplier
Network	Scienc		Prepar	Analysi		Improv	System
C	Sql		Advisori	Commit		Process	Design
Platform	Test		Analyt	Relationship		Product	Control
System	Tool		Practic	Analyst		Design	Product
Custom	Languag		Statement	Statement		Continu	Industri
Database	Problem		Financ	Bank		Supplier	Autocad
Hardwar	Python		Pension	Excel		Control	Safeti
Scienc	Solut		Interperson	Actuari		Weld	Qualiti
User	Linux		Organ	Result		Project	Prototyp
Lead	C#		Risk	Prepar		Specif	Improv
Comput	Android		Review	Market		Perform	Custom
Implement	Comput		Market	Report		Safeti	Technic

Note. Grey cells indicate matched words within program between 2004 and 2014

We further wondered whether this trend (a lack of change) would reveal itself across the most popular and least popular job advertisements, specifically in 2014. The content of job

advertisements for the top 10 percent of jobs (i.e., the most applied to) was compared to the

content of the bottom 10 percent (least applied to). Table 6 shows the results of this comparison.

Table 4.

Comparison of frequently occurring words and phrases in 2014 for least and most popular job ads across three programs

Computer Science (10 of 25 match)			Financial Management (8 of 25 match)			Mechanical Engineering (11 of 25 match)	
Least	Most		Least	Most		Least	Most
C++	Featur		Tax	Financi		Arrang	Mechan
Code	Java		Account	Financ		Mechan	Manufactur
Languag	Code		Audit	Account		Advertis	Assembl
Test	Mobil		Financi	Capit		Manufactur	Electr
Java	C++		Statement	Analyst		Machin	Engin
User	Platform		Client	Invest		Engin	Supplier
Web	User		Prepar	Busi		Equip	Equip
Linux	C		Financ	Bank		Draw	Solidwork
Softwar	Web		Offic	Analyt		Fabric	Cad
Server	Android		Busi	Analysi		Test	System
Featur	Oop		File	Market		Design	Test
Advertis	Fun		Bookkeep	Adhoc		Materi	Plant
Sql	Python		Advertis	Strategi		Solidwork	Automot
Tool	Algorithm		Servic	Credit		Assembl	Innov
C	Game		Arrang	Offic		Product	Product
System	Passion		Charter	Written		System	Design
C#	Problem		Analyt	Risk		Industri	Control
Platform	Scalabl		Advic	Manag		Measure	Build
Mobil	Build		Bank	Riskmanag		Cad	Qualiti
Solut	Softwar		Relationship	Priorit		Machineri	Technic
Implement	Languag		Op	Oper		Autocad	Plastic
Framework	Contribut		Document	Present		Safeti	Layout
Learn	Help		Report	Detail		Mainten	Prototyp
Javascript	Javascript		Analyst	Decis		Specif	Improv
Network	App		Industri	Excel		Research	Safeti

Note. Grey cells indicate matched words within program between least and most popular job

advertisements. Least and most = least and most popular positions based on application data

The results suggest that there are several more differences between the least and most popular job advertisements in one year (2014) than there were between advertisements from 2004 and advertisements from 2014. Indeed, 18 of 25 key words were consistent across mechanical engineering job advertisements from 2004 to 2014. And yet, just within 2014, only 11 of 25 key words were consistent between the least popular and most popular advertisements.

Discussion

Somewhat to our surprise, data parsed from a ten year period across three programs suggest that job advertisements have not changed dramatically. The key words and phrases including in advertisements from 2004 tend also to be present in 2014. There are several explanations for this pattern. First, it may be that organizations' talent needs are evolving but their methods for recruiting talent to address those needs have not. It is possible that there is a gap between what recruiters seek and how they advertise their needs. Intuitively, it seems likely that there are specific aspects of talent that organizations might seek today that they did not seek ten years ago. There are clear examples of key words that were present in job ads from 2014 that were not present in 2004. This might signal a shift in talent needs over time.

Conversely, it could be that the sort of talent sought be organizations in these industries has not changed dramatically over the past 10 years. This explanation is somewhat corroborated by interview data collected in study 1. When asked whether their descriptions of talent today are consistent with their views of talent from years past, several participants said that their perspectives have not changed. They said that the meaning of talent from some years ago is the same as the meaning of talent today. Indeed, there seems little reason to believe that aspects of talent such as work-readiness, self-direction, and potential, would be temporally bound. These descriptions of talent appear to be consistent across contexts and time periods. Specifically

examples of how those aspects play out might change in minor ways, but the concept might remain the same. For example, computer science students in 2004 were recruited based on an understanding of Java (a computer programming language). Java was a less popular phrase in advertisements from 2014, suggesting that Java as a particular language is less desirable for the students. Still, the underlying principle of computer programming, and the skills related to whichever language is presently used –which we argue would be classified as an example of work-readiness – is still highly desirable. In sum, overarching perspectives on talent may not have changed, and this may explain why advertisements for talent show remarkable similarities between 2004 and 2014.

To that point, it may be that these industries consistently advertise for *threshold aspects* of talent. Threshold aspects of talent might represent forms of talent, such as skills, that are necessary but not sufficient for successful workplace performance. That is, job advertisements might be used to elicit responses, such as résumés and cover letters, which help organizations to screen out unqualified candidates. Successful computer programmers, for instance, might need to demonstrate a strong competency by way of computer programming skills (e.g., coding) but might also need to have a personality that fits in with that of the organization. Recruiters might not be concerned with including descriptions of organizational "personality" in job advertisements, because they intend to use other recruitment methods (such as interviews) to select appropriate candidates. This could explain why advertisements across all three programs, all of which are content-rich and STEM-based, reflect a bias towards skills (e.g., work-readiness) rather than other aspects of talent identified in study 1 (e.g., potential, self-direction).

General Discussion

The purpose of this paper has been to explore the potential functions of universities and colleges in supporting organizations' talent management pipelines. In increasingly difficult conditions, PSE institutions are under pressure to demonstrate their contribution to the workforce. Organizations in industry are also challenged to recruit and develop increasingly talented people. While there is an obvious connection between participation in PSE and talent, we sought to gain a better understanding of this connection.

In study 1, we revealed a multi-dimensional understanding of talent that is connected by environmental (e.g., economic, societal, situational) conditions and also with organizational practices. The problems faced by organizations are linked with their perspectives towards talent, which are further linked with their talent management practices. Participants also offered several perspectives regarding how PSE contributes to these practices. Largely, participants pointed to the importance of experiential education, generally, and work-integrated learning specifically. Experiential education helped to bring employers' needs into the classroom, aligning teaching and learning with organizations' interests. It also helped to showcase to employers students' learning outside of the classroom in ways that was accessible to recruiters. Work-integrated learning specifically helped reduce talent recruitment and development costs, fill talent gaps in several areas of the organization, and was fundamental to the success of the talent pipeline.

Study 2 made a substantial contribution to our understanding of organizations' recruitment in the context of co-op. This study developed a novel technique for discerning descriptions of talent expressed in recruiters' co-op job advertisements. This technique can be used in subsequent studies for any number of imaginable comparisons of job descriptions across any conditions of interest. In this study, analyses revealed that popular and unpopular jobs,

categorized based on the number of applicants (adjusted for size of the available population) include *different* words and phrases. This seems to suggest that how organizations put forward their job openings to students plays a significant role in organizations' ability to recruit talent. While many organizations across the three programs analyzed here are recruiting for similar sorts of talent (that is, for example, mechanical engineering organizations are often competing for the same pool of talent), positioning a job to students in a particular way bears on the success of the recruitment effort. Given similar roles across organizations, it seems that students are more likely to apply to particular openings based on the contents of advertisements for those openings.

Directions for Future Research

The two studies covered in this report were exploratory in nature. They provided a first attempt at increasing our understanding of PSE's contributions to organizations' talent management practices. From these studies comes several opportunities for future research. The first direction for future research is to determine whether the multi-dimensional conceptualization of talent identified here (study 1) is consistent across a larger sample of organizations. Perhaps using a large representative cross-sectional survey of organizations might reveal a more nuanced perspective regarding talent. This survey could also determine whether there are industry-specific, organizational size-specific, or geographic-specific differences in how organizations define and articulate what talent means to them. Similarly, it would be useful to confirm the conditions under which these perspectives on talent emerge. By identifying the cases in which certain views on talent are expressed, job seekers might be better able to match their talents with organizations' needs.

Further, there is clearly a need to review the literature regarding organizational attractiveness and to understand its role in talent management. Several organizations that are

important to the Ontario economy articulated an inability to recruit top talent. They also expressed a strong desire to recruit such people and a strong ability to offer them excellent work opportunities including impressive remuneration and development opportunities. Much has been written and said previously about a *skills gap* in the labour market. It could be that an explanation of this skills gaps relates directly to organizational attractiveness. Thus, future research could examine students' perceptions of several organizations to determine the factors that influence attractiveness. More targeted research could then develop and assess interventions that direct attraction to organizations seeking talent. Doing so might address "gaps" in the labour market by matching talented people with organizations that need them most.

In study 1, interview data suggested that how organizations think about talent is linked with how organizations go about recruiting and developing talent. Talent recruitment is perhaps of particular interest to both organizations and PSE institutions. Future studies could address the link between organizations' view of talent and their strategies for acquiring that talent. Are organizations' perspectives predictive of their recruitment methods? Answering this question would help the PSE community to better align their interactions with organizations to organizations' talent needs.

Study 2 addressed how organizations are expressing talent needs in their co-op job advertisements. There is a particularly fruitful avenue of research regarding how organizations market themselves to talented students. We identified that descriptions of talent in job advertisements have not changed much over the course of a 10 year period. However, job advertisements to which many students apply differ from job advertisements to which few students apply. There is something revealing about this difference which, if identified, could help organizations more efficiently recruit talented students. Benefits to improving organizations' job

advertisements might also accrue to students, who may be overlooking several excellent work opportunities solely based on unattractive job advertisements.

Also in the area of job descriptions, further research is required to elicit why job advertisements, at least in the programs analyzed in study 2, so heavily reflect a skills-based focus. As mentioned, one explanation is that job advertisements are used to attract those with necessary skills, and subsequent steps of the recruitment process are used to screen candidates for other aspects of talent. Indeed, the recruitment literature suggests that several stages of recruitment are important to finding the best candidate for the job (Saks & Uggerslev, 2010). However, several organizations mentioned that they recruit based not on work-readiness but on other aspects of talent. Thus, advertisements that request skills-based applications might deter several potentially excellent candidates from following through on traditional applications. This is an area in need of future research.

One final suggestion for future research would be to expand on this study by including the perspectives of academics. Specifically, future research could identify perspectives towards talent held by members of the PSE community. Doing so would help to compare how those within PSE institutions think about talent and how organizations in industry think about talent. This comparison could highlight potential areas of overlap but also areas in which alignment activities could be developed. Given that organizations hoped for a greater alignment of PSE activity and organizational practice, identifying gaps in understandings of talent across these two groups seems warranted. Part of this exploration could focus specifically on instructors' perspectives towards including organizational perspectives in classroom activities. Employers expressed interest in increasing involvement in the classroom, but whether instructors are open to this and under what conditions they might endorse this involvement are unclear.

Author Notes

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Dr. Fondacaro is the Director of Student and Faculty Relations in the Co-operative Education and Career Action department at the University of Waterloo. He is interested in work-integrated education and co-op due to its increasing importance and the mounting evidence that co-op leads to better employability, increased pay, and greater opportunity for individuals following graduation. Both co-op research and practice are of interest to him. Recently, he has been engaged in strategic initiatives aimed at evolving the co-op model that may impact future programming to better serve increasing diversity of needs for students and employers. Though he has no current research underway, he has been engaged in work related to assessing life-long

learning and non-traditional work-integrated learning (WIL) with focus on first work term student success.

Mr. Drewery is Research and Administrative Coordinator, Waterloo Centre for the Advancement of Cooperative Education. He is an emerging scholar within the WIL field. He has received grants from WACE and OHCRIF to study aspects of cooperative education. His recent research has appeared is several journals including the *Education + Training, Higher Education Research and Development, Journal of Education and Work* and the *Asia Pacific Journal of Cooperative Education*.

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