Exploring diversity and inclusion in work-integrated learning: An ecological model approach

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This paper identifies structural barriers faced by postsecondary students from diverse groups (women, racialized people, people with disabilities, and Indigenous peoples) when accessing work-integrated learning (WIL) programs. Drawing on the ecological model approach, this paper examines the challenges to inclusive WIL in Canada at the macro-level by looking at government funding for WIL programs; the meso-level by considering employer participation in WIL programs; and at the micro-level, by analyzing individual students' demographic characteristics. In considering micro-level factors, a quantitative approach is used to analyze the demographic characteristics of WIL applicants, while for meso-level factors, the paper utilizes a qualitative analysis of semi-structured interviews designed to capture employer perspectives. The study provides recommendations for policy-making, considers practical implications, and makes suggestions for future research.

Keywords: Work-integrated learning, postsecondary students, diverse groups, ecological model approach, systematic exclusion

Globally, there is growing interest in the potential of work-integrated learning (WIL) for improving employment outcomes for university graduates (Mason et al., 2009; Sharma, 2013; Wyonch, 2020). WIL, recognized as a solution for the "skills mismatch," contributes to a smoother transition for university graduates entering the labor market (Cukier et al., 2018). However, students who are members of diverse groups may face barriers and challenges when accessing WIL. Using a mixed-methods approach, this paper examines barriers and challenges that postsecondary diverse students face in accessing WIL in Canada.

Literature Review

WIL can be used to describe a range of programs such as field placements, internships, articling, apprenticeships, optional co-operative placements, and residencies and are often required in disciplines like nursing, medicine, and law (Business Higher Education Roundtable, 2016). Studies have found a positive correlation between WIL and employment. For example, students who participate in co-op programs tend to have higher employment and full-time employment rates and higher earnings than their peers who do not (Council of Ontario Universities, 2014). Using LISA (Longitudinal and International Study of Adults) data, a study by Martin and Rouleau (2020) showed that 74.6 % of Canadian students who were employed in a job related to their field of study during their postsecondary education, had full-time employment status three months after graduation. In contrast, only 60.5% of those who did not have work experience related to their field of study were employed full-time after graduating. In addition to educational credentials, past work experience is often a requirement for entry-level jobs. This makes it necessary for recent graduates to acquire WIL

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experience prior to graduation (Martin & Rouleau, 2020; Rodriguez et al., 2016). WIL is also a pathway to full-time employment for students and recent graduates since employers use co-op programs to develop relevant, transferrable, and marketable skills and pre-screen potential hires (Peters et al., 2014).

The Government of Canada has enacted an ambitious plan to ensure all university undergraduates have access to WIL. In 2017, Canada's government launched the Student Work Placement Program (SWPP) to forge partnerships between employers and postsecondary institutions in Canada (Government of Canada, n.d.). The SWPP will create more than 11,500 paid student work placements through 2021 (Co-operative Education and Work-Integrated Learning Canada, n.d.). This program provides wage subsidies to employers who offer student work placement opportunities to postsecondary students in science, technology, engineering, math (STEM), and business programs. A unique aspect of the SWPP initiative is that it provides elevated subsidies to incentivize the hiring of students from diverse groups, including Indigenous students, newcomers and women in STEM. With increased financial support, this initiative can lower the barriers for participation for both large and small employers and widen the employers' capacity to work with WIL students.

Although WIL has the potential to support the transition from post-secondary education to the labor force for a diverse body of students in Canada, evaluations of WIL rarely consider diversity. To our knowledge, there is no complete diversity data for the WIL programs in Canada, and little diversity data has been collected on the long-term employment outcomes of WIL graduates (e.g., Peters et al., 2014). Yet, a range of evidence suggests that substantial disparities in post-graduation employment rates and salaries exist between disciplines, and salaries and post-graduation employment rates within disciplines also varies considerably by demographic characteristics (Hango, 2013). For instance, women in Canada generally earn less than men (Statistics Canada, 2019). Even in STEM fields like engineering, women earn considerably less than their male counterparts (Corbett & Hill, 2015; Sterling et al, 2020). Evidence also suggests that persons with disabilities who are university graduates have employment outcomes comparable to persons without disabilities who have not completed high school (Zarifa et al., 2015). In Canada, job seekers from employment equity groups face well-documented unconscious biases and barriers (Banerjee, et al., 2018; Oreopoulos, 2011). As a result, high levels of underemployment and unemployment have existed for women and racialized people, people with disabilities, and Indigenous people (City for All Women Initiative, 2016; Reitz et al., 2014; Statistics Canada, 2011; Turcotte, 2014, Uppal & LaRochelle-Côté, 2014). This raises the likelihood that post-secondary students belonging to these groups will experience exponential benefits from accessing WIL programs.

However, research also shows that access to WIL programs is uneven for members of diverse groups. Data on access to articling positions among law school graduates shows members of certain diverse groups are less likely to receive articling positions (Ha-Redeye, 2017). There is also evidence of a gendered dimension to successfully accessing WIL programs (Walters & Zarifa, 2008). In STEM and trades, women students are generally underrepresented in WIL placements, including trade apprenticeships (Taylor et al., 2015).

Using the existing limited international literature, it identified potential barriers to accessing WIL programs for members of diverse groups. For example, students with disabilities report facing physical and attitudinal barriers in the workplace when completing WIL programs (Cocks & Thoresen, 2013). These studies showed students with disabilities were twice as likely to report barriers such as harassment or bullying than those without disabilities (Cocks et al., 2015; Cocks & Thoresen, 2013).

Additionally, students with disabilities feared disclosing their disability due to fear of discrimination and stereotyping (Scholl & Mooney, 2004).

At present, limited research on the experiences of LGBTQ students in WIL placements can be found. While researchers recognize that the term LGBTQ2S+ is the more inclusive term, the quantitative data we used asked about LGBTQ experiences and, therefore, LGBTQ was used to be consistent with the data. In one study, LGBTQ students reported experiencing discriminatory attitudes and behaviors while on placement and felt pressured to hide their sexual orientation during their social work placements because of homophobic workplace cultures (Messinger, 2004). This, and subsequent studies, also show that LGBTQ students often also feel anxious and unsafe in the workplace (Messinger, 2004; 2013).

The research on women and WIL shows that many women experience bullying, physical or emotional intimidation, and sexual harassment during WIL placements (Moylan & Wood, 2016; Newhook, 2016). International students also face difficulties with WIL placements, especially with language and cultural barriers. In many cases, employers cite lack of cultural fit when assessing women or international students' performance during WIL placements (Felton & Harrison, 2017, p. 94; Harrison & Felton, 2013). International students also lack access to social and professional networks (Gribble et al., 2015).

Although these studies identify several challenges faced by diverse students in relation to WIL placements, it is unclear whether diverse students also encounter systemic barriers to accessing WIL programs prior to their placements. Since WIL acts as a gateway to employment, it is critical to employment equity that members of diverse groups have equitable access to these placements and opportunities (Cukier et al., 2018). While the WIL programs have to meet employers' needs, they are required to intentionally ensure that diverse students can equally access the programs and smoothly transition from their education into employment. Addressing the complex and multi-layered nature of the issues requires multiple perspectives to understand how the WIL system works and where potential barriers exist. For these reasons, this study aims to identify the systemic barriers to accessing WIL programs for post-secondary students belonging to diverse groups (women, racialized people, people with disabilities, and Indigenous persons). In particular, we asked the following research questions:

1. To what degree are diverse students interested in WIL programs?
2. Do WIL employers see the value of EDI (Equity, Diversity and Inclusion) when hiring WIL participants?
3. How aware are WIL employers of the potential barriers to participation and challenges students face from diverse groups? What accommodations do WIL employers provide in their organization?
4. What are the barriers employers face to incorporating diversity and inclusion in WIL?

Theoretical Framework: Ecological Model Approach

This study relies on the critical ecological model proposed by Cukier et al. (2013). The critical ecological model was built upon Urie Bronfenbrenner's work (Bronfenbrenner 1976, 1977, 1979, 1986, 2005; Bronfenbrenner & Ceci, 1994), and focuses on understanding how micro, meso, and macro factors interact to improve an individual's development and behavior (Cukier et al., 2020). The critical ecological model has been employed to examine factors contributing to diversity and inclusion at various levels (Cukier et al., 2020), and allows us to have a shared view of different players to enhance

diversity and inclusion in WIL. This approach tackles issues like societal, organizational, individual, and interactional analysis and interventions in order to affect change (Figure 1).

FIGURE 1: The ecological model for change.

Societal LEVEL   Organizational LEVEL   Individual LEVEL
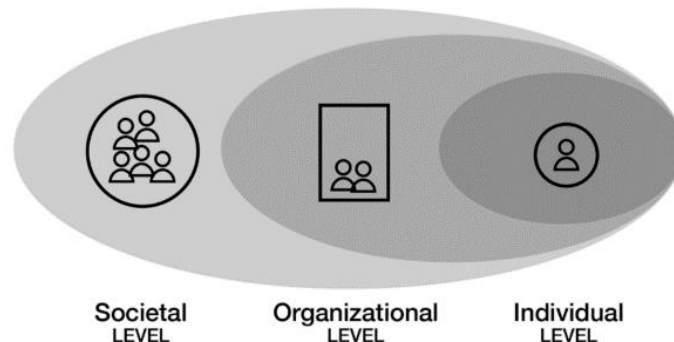
Note. Adapted from "Utilizing an Ecological Model to Advance Social Mobility and Economic Integration of Newcomers," by W. Cukier, 2019. https://metropolisconference.ca/wp-content/uploads/2019/09/92955703911717.pdf Copyright 2019. Adapted with permission.

The ecological model offers a framework to systematically deconstruct overlapping barriers to accessing WIL programs. The three main stakeholders for WIL programs are students, institutions, and employers (Hurd & Hendy, 1997). We examine the multi-layered WIL system with a particular focus on the organizational and societal levels to understand the systemic barriers. Our examination focuses on measuring the diversity of student participants in WIL programs and their interest in WIL. We also investigate employer approaches to the WIL programs using a diversity lens, as well as the broader social context of current government policy and programs for WIL.

METHODS

This study employs a mixed-methods approach to addressing the research questions. For the quantitative study, a secondary source of WIL applicant data was used. In order to gain a more holistic understanding of the barriers that exist, semi-structured interviews were also conducted with employers. Through the ecological model approach, this study adopts a multilevel analysis of WIL programs, with individuals engaging with organizational-level agencies, while these agencies are also embedded in particular social and policy-level contexts. First, quantitative analysis was undertaken to understand the demographic attributes of participants in the WIL programs. This serves to uncover possible disparities in students' participation in WIL. To understand the organizational and societal levels, the interviews were conducted with employers who have experienced hiring students from WIL programs. It did not limit the employers we engaged to a specific sector or scale in efforts to have a wide variety of viewpoints. Ethics approval for the interviews was granted from the Research Ethics Board at Ryerson University.

Demographic Data of the Work-Integrated Learning Program Applicants

Demographic data was provided by Magnet, a not-for-profit, digital social innovation platform co-created by Ryerson University and the Ontario Chamber of Commerce. Magnet has created an intelligent-skills matching technology that assists job seekers of all ages and life stages in finding meaningful employment. Their portal was advertised through social media (Facebook and LinkedIn) and Magnet's partners, including chambers and business associations. Magnet is open to all job-

seekers. However, only the data from WIL students or students who applied to WIL positions were extracted. The data for this research was taken from the student registration information provided by students when they signed up to use Magnet services and from applications when students applied to WIL jobs through the Magnet portal.

The data consists of job seekers in Ontario with degree-type education who were matched (invited to apply to) or applied to a WIL-type job posting between May 1, 2017, and November 1, 2019. The sample for analysis consisted of 3235 students who applied to WIL positions through the Magnet portal. The data also contains information regarding WIL positions that were posted from May 1, 2017, to November 1, 2019. The sample for analysis consisted of 4791 WIL postings.

Interviews with Employers

    Sample

The one-on-one semi-structured interviews were conducted with 11 employers in November 2019. The employers are from various sectors, including municipal, not-for-profit, legal, financial services, and community services. Interviews aimed to explore employers' experiences with WIL programs to better understand their perceptions of the barriers and challenges faced by postsecondary WIL students from diverse groups. The employer interviews were conducted in the study to capture the perspectives of those working in recruitment and hiring.

Interview participants included those responsible for recruiting, hiring, or supervising WIL students in their organization. The employers utilized different types of WIL programs, including co-op, articling, and work study. The telephone interviews lasted an average of 20 to 30 minutes. If the participants did not wish to be contacted by telephone, they were allowed to submit written responses. The interview questions sought insight into 1) the barriers students from diverse groups face when participating in WIL, 2) employers experiences working with students from diverse groups, and 3) selection/hiring processes and accommodation policies/practices within organizations.

    Analysis

Interviewees were selected purposefully to get meaningful data, and nine audio-recorded interviews and two written interview responses were used for this analysis. Audio data was transcribed with permission from the participants. The transcripts were analyzed for thematic content using methods laid out by Braun & Clark (2006) by identifying repeated words, terms and concepts. Anonymized interview data was used for the analysis. Pseudonyms were given to all the participants before conducting data analysis. To improve the reliability and validity of this analysis, data analysis was conducted by three researchers. Data was coded by theme, and each researcher created themes. Researchers then discussed the themes until consensus was reached. The most experienced researcher led this process and checked for personal biases and expectations.

RESULTS

Findings from the Work-Integrated Learning Applicants Data

Using data from the WIL postings (n=4791), information regarding the types of WIL positions available for the period studied was determined (Table 1). Nearly all the WIL postings required some type of credentials. For example, 69.2% of the WIL postings required an undergraduate degree, current undergraduate status or higher education. The majority of WIL postings were targeted towards Business (58.8%) or STEM (49.0%) students/graduates. WIL postings were mainly for internships

(56.4%) or co-op placements (38.2%), and almost all positions (96.7%) were entry-level. Moreover, while most WIL postings were paid positions, nearly one-fifth (19.1%) were unpaid.

Table 2 summarizes the demographic data of the WIL applicants. About 92% of the applicants had or will have an undergraduate degree. Applicants tend to have a high-grade point average (GPA), with 97.2% having B or higher GPA. The majority of applicants were from Business (43.5%) or STEM (44.2%). Nearly a third of WIL applicants identified as racialized (32.2%), and a quarter (25.1%) identified as women. Approximately 9.3% of applicants identified as newcomers to Canada, 4.7% identified as LGBTQ and 4.3% identified having a disability. It should be noted that a very small minority of WIL applicants identified as Indigenous (0.2%).

In Table 3, the field of study of WIL applicants was examined regarding whether the applicant indicated they belonged to a particular diverse group. It should be noted that when doing cross-tabulations, there were limited sample sizes in cells for certain disciplines. Therefore, only the compositions for Humanities/Social Science, STEM, and Business were able to be analyzed. Moreover, due to the small number of applicants identifying as Indigenous (n=3), the data were not able to represent this population. The results show that most WIL applicants in Business fields comprised those who did not identify with any of the diverse groups or preferred not to declare their identity. Women applicants were more likely to be in Humanities or Social Science fields than any other field, while racialized minorities were more likely to be in STEM. Applicants who were newcomers to Canada were also more likely to be in STEM fields and Business than Humanities/Social Science. LGBTQ applicants and those with disabilities were more likely to be from Humanities/Social Science disciplines.

Findings from Stakeholder Interviews

Four major research themes were extrapolated from the interview data, including 1) Government funding and employer budgeting, 2) Recruitment and selection, 3) Skills gaps and employer expectations, and 4) Accommodating underrepresented groups.

1) Government funding and employer budgeting

Funding can help bridge cost-related gaps for employers participating in WIL programs. Most research participants indicated that funding (such as the federal government funded SWPP) plays a significant role in the ability of recruiters to hire WIL participants by lowering costs for employers.

One interviewee stated, "the funding greatly helps us subsidize … smaller departments in the city, where they could not hire an engineering student without the grant...if we were not successful with some of the grants, we wouldn't be able to hire." Another participant recognized how valuable funding can be because it is "leveraged to create new opportunities." Indeed, the funding does not replace "something that would have been funded anyways." Rather, more opportunities are created for students specifically. Additional funding is also important because the companies interviewed have had to pivot to include EDI programs, which was not part of their initial financial plans. Due to existing employment structures, such as insufficient HR resources and human power to support and supervise students, providing a specific focus on underrepresented groups requires more financial resources, which smaller companies may not have readily available.

TABLE 1: Summary of work-integrated learning employment opportunities.

Credential Required	N = 4743	%
Secondary School	183	3.9
Certificate	180	3.8
Diploma	1101	23.2
Undergraduate	3220	67.9
Master's	55	1.2
Doctorate	4	0.1
Subject Area	**N = 4461**	**%**
Business	2623	58.8
STEM	2185	49.0
Humanities/Social Sciences	1233	27.6
Trades	882	19.8
Education	152	3.4
Health Sciences	94	2.1
Law	90	2.0
Job Type	**N = 4791**	**%**
Internships	2703	56.4
Co-operative Education	1828	38.2
Field Placement	201	4.2
Work Experience	51	1.1
Service Learning	3	0.1
Applied Research Projects	2	0.04
Apprenticeship	2	0.04
Mandatory Professional Practicum/Clinical Placement	1	0.02
Job Level	**N = 4791**	**%**
Individual Contributor - Entry Level or Junior	4635	96.7
Individual Contributor - Mid Level	130	2.7
Individual Contributor - Senior Level	11	0.2
General Labour	8	0.2
Manager - First-level	6	0.1
Manager - Mid-level	1	0.02
Job Compensation	**N = 4791**	**%**
Paid - Hourly	2217	46.3
Paid - Contract	884	18.5
Paid - Salary	669	14.0
Paid - Variable	82	1.7
Paid - Fixed + Variable	23	0.5
Unpaid	916	19.1

Note. Percentages exceed 100 because categories are not mutually exclusive.

TABLE 2: Work-integrated learning applicant demographics

Credential Level	N = 3235	%
Undergraduate	2981	92.1
Master's	221	6.8
Doctorate	33	1.0
GPA	**N = 653**	**%**
A	322	49.3
B	313	47.9
C	18	2.8
Diversity Declaration	**N = 1532**	**%**
Members of a "visible minority" (racialized group)	493	32.2
Women	384	25.1
Newcomers to Canada	143	9.3
LGBTQ	72	4.7
Persons with disabilities (including mental health and neurological issues/illnesses)	66	4.3
Indigenous peoples	3	0.2
None or prefer to not declare	759	49.5
Location (City/Town Size)	**N = 3235**	**%**
Large urban	3185	98.5
Medium	20	0.6
Small	30	0.9
Subject Area	**N = 3020**	**%**
STEM	1334	44.2
Business	1314	43.5
Humanities/Social Sciences	447	14.8
Trades	55	1.8
Health Sciences	25	0.8
Education	23	0.8
Law	9	0.3

Note. Percentages exceed 100 because categories are not mutually exclusive.

TABLE 3: Applicant subject area percentage compared to applicant diversity.

DIVERSITY DECLARATION	Business (n=601)	Humanities/Social Sciences (n=447)	STEM (n=676)
LGBTQ	4.0	7.3	5.3
Members of a "visible minority" (racialized group)	32.3	33.2	35.2
Newcomers to Canada	8.8	5.5	11.7
Persons with disabilities (including mental health and neurological issues/illnesses)	4.5	9.5	3.4
Women	25.1	38.6	22.6
None or prefer to not declare	50.1	42.3	47.2

Note. Percentages exceed 100 because categories are not mutually exclusive.

To receive certain subsidies, employers indicated that students had to meet eligibility criteria. These criteria may include full-time employment and full-time postsecondary status, which act as barriers to access. Multiple interviewees expressed the importance of adjusting funding requirements to accommodate more students in the WIL programs. Interviewees also noted it was important to maintain good relationships with funders so that the criteria, such as full-time status, could be negotiated. It is clear that government funding had a positive impact on the companies involved in the programs. One interviewee stated:

> What we have done to help open the program up a little bit is we reduced the [requirements], and there was a requirement we had to do in partnership with the federal government, but there was a requirement that all placements had to be full-time and all students had to be registered full-time in college and university or polytechnic. So we've reduced that requirement to be just registered in a post-secondary institution, and it's up to us to determine whether or not they would be eligible for the placement. It is up to the student and the employer.

2) Recruitment and selection

Some employers hired students using previous relationships built with post-secondary institutions through co-op programs. Interviewees described leveraging strong partnerships with academic institutions to hire diverse students, and also using the services of recruiters to identify diverse candidates. Employers indicated that it was important to them that their organization reflect their consumer base. As a result, many recruiters were aware that their WIL advertisement needed to be in places accessible to members of diverse groups. One interviewee said, "we are an equal opportunities employer, so we try and advertise in a wide variety of places, for example, at the welcome center for new immigrants, through different associations, through different universities and colleges." Some interview participants indicated that they actively adopt diversity and inclusion in their hiring process.

Participants also recognized how WIL could improve the candidate pool stating:

> We've got to grow the pool, we've got to open up our minds to the pockets of real talent out there and so where can we access them, how we can make it easier for them to access us and to bring them in, so we are trying to attract more diverse students and targeting different diversity groups ... I think where WIL can really play a role at all levels of the spectrum, its broadening the pool for all cohorts.

Some employers viewed participation in WIL as an investment in building the pipeline of future employees. One participant stated that they participate in the WIL programs to, "identify potential full-time employees." Participants indicated that, "When students return to school after a WIL opportunity, we keep the relationship warm through networking and online engagements." The networks students build through WIL can be vital, particularly for diverse groups to access full-time jobs and even the playing field.

It should be noted that participants indicated difficulties with accessing members of certain diverse groups. One participant indicated facing the challenge of engaging Indigenous students in their WIL program. For example, "we found that we were having challenges with our number of Indigenous students and students with disabilities." Many Indigenous students living in rural and remote communities face physical barriers to accessing WIL programs, which are usually based in urban centers. For students with disabilities, their challenges are different from employers perceived that students with disabilities lean toward self-selected opportunities. As a result, the interviewee's

organization altered the job descriptions from full-time position to part-time position to accommodate diverse students' needs.

3) Skills gaps and employer expectations

WIL can bridge the skills gap. One interviewee stated that one of the barriers for new graduates is the competition in an oversaturated labour market because of "tens of thousands of students graduating from postsecondary institutions [there are] … only so many jobs for them." The participant recognized that WIL programs can give graduates "the qualifications and the skills and the presentation to be able to compete with everybody else."

Both soft skills and hard skills are required in the workplace, and students often do not develop these skills solely through their university education. WIL programs can be helpful in developing these skills. One legal organization recognized that they were able to transmit knowledge to fill in skills gaps for students through various informational sessions that taught WIL participants what "they may not have been exposed to in law school, so for example ... an introduction to commercial real estate."

Participants recognized the importance of prioritizing members of diverse groups for WIL to support members of these groups succeed in an increasingly competitive workplace. One organization implemented a mentorship and sponsorship program to improve the skills gap for diverse groups. One participant stated:

> The majority of our students identify as racialized women. We are very much focused on mentorship and giving them 'stretch' opportunities to build up their portfolio of work and reach their full potential. We focus a lot on sponsorship to ensure they are able to demonstrate the full scope of their skill set and hone their skills.

4) Accommodating underrepresented groups

Although all interviewees clearly stated that diversity and inclusion were necessary, none of their organizations had a diversity and inclusion department for WIL. On the other hand, every organization involved had different levels of commitment towards EDI. For example, interviewees recognized that students who experience barriers have different needs during the process of recruitment. One participant indicated that:

> We follow organization's policies around accommodation and so, as an example, there was a student disability that needed, say as a concrete example visual impairment, we would obviously provide all of the equipment. We would look at their ability and flexibility to work from home, so lots of different ways, and it would be done on a case-by-case basis because there is a large range of different things that could be required to accommodate, so we do this as an open discussion and respond to the needs that the employee would request to us.

While organizations seemed to support accommodation on a case-by-case basis, they also indicated not having formal policies on reasonable accommodation. For example, one participant stated:

> We definitely have anti-discrimination and harassment policy with a procedure if there is ever a complaint… We don't have a specific policy on accommodating needs from these groups but we would do that. And we do accommodate, but without a lot of formal policies on it.

The fact that some organizations do not have formalized policies and processes is indicative of why members of diverse groups may experience challenges in the workplace with accessing accommodation. This was despite almost all participants stating that it is vital to be inclusive in their hiring process.

Employers interviewed were aware of diverse groups' tendency to not self-identify or disclose the need for accommodation. One participant indicated that WIL participants often do not disclose due to fear because "they worry it would limit the placement opportunities available to them." Another participant stated that "I actually think that students with disabilities under-report disability… and the reason they do this is because there are stigmas attached; at least, there are believed to be stigmas attached to self-reporting a disability." In addition, self-selection by students for the WIL position can be a barrier to participate in the WIL programs. An interviewee stated, "I think many candidates do a lot of self-selection, and they say I don't think I would fit in there." The interviewee continued that "I think that this happens, […] Unconscious bias is a barrier, and we try to educate people about the tendency to favor people who look like yourself. So that's an education piece."

While employers acknowledged that the needs of diverse students are important for them, all participants indicated that the organizations' actual ability to prioritize the support is hampered due to a lack of resources. Some organizations only had one person dedicated to Equity, Diversity, and Inclusion (EDI). For example, one participant stated, "we're a small company, so I'm kind of the diversity person." Small companies have difficulties implementing diversity policies in the WIL programs. One participant commented:

> We're not federally regulated, so our ability to identify diversity groups is pretty narrow, and I try to implement diversity policies and practices where I can, but there are constraints with not having a legal mandate, the constraints of it being a smaller company as well.

Most participants echoed the sentiment that diversity and inclusion initiatives fell to HR departments. EDI seemed to be a responsibility added onto an already strained HR department. In order to advance EDI in these organizations, someone generally had to take on more responsibilities to create diversity and inclusion initiatives. Interviewees also mentioned that the size of the organization prevents them from having a diversity and inclusion office or committee for the WIL programs. These systemic barriers, particularly the lack of resources to support diversity and inclusion initiatives, pose a major challenge for organizations to prioritize diversity and inclusion within the WIL programs.

DISCUSSION

The results of this study identified multiple systemic barriers for diverse students to access WIL programs. Individuals' challenges reflect organizational and societal challenges in promoting, sustaining, and implementing diversity and accessibility for WIL programs. Drawing on the ecological model, the implications of the findings are discussed below.

Applicants at the Individual Level

The quantitative analysis of WIL applicants shows significant disparities in who is applying to WIL opportunities. However, it needs to be emphasized that the data used in this study is not representative of all WIL participants in Canada. Unfortunately, diversity data for WIL programs in Canada is extremely limited. The results of this paper demonstrate that there is a lack of WIL applicants from diverse groups overall, but this is particularly true of those who identify as women and those who identify as Indigenous. Given that women graduate from postsecondary education more than men

(women 56.8% vs men 43.2% in 2018) in Canada (Statistics Canada, 2018), women applicants to WIL programs are underrepresented in the data set. Moreover, based on the results, newcomers are slightly over-represented in the applicants, compared to newcomers' representation of 3.5% of the national population in 2016 (Statistics Canada, 2017). People with disabilities are under-represented as 13% of the youth aged 15 to 24 years in Canada reported having at least one disability (Morris et al., 2018). Indigenous people are also underrepresented as the Indigenous population of Canada is 4.9% of the total population (OECD, 2020). In other words, while WIL programs attracted many newcomer applicants on the one hand, members of other diverse groups were underrepresented among applicants on the other hand. From these results, it is concluded that members of certain diverse groups are likely to face possible structural exclusion from WIL programs.

There were also significant differences across disciplines for members of diverse groups who were accessing WIL opportunities. These differences reflect the general trends that occur in the Canadian labour market. For example, women applicants were overrepresented in Humanities/Social Sciences but underrepresented in STEM and Business. The idea that women are underrepresented in STEM education and overrepresented in the Humanities has been well-documented. These gaps continue to widen when women transition to the labour market (Wall, 2019). The opposite effect was observed among applicants who were newcomers to Canada. This group was more likely to be in STEM and Business and less likely to be in the Humanities/Social Sciences. Research shows that immigrants account for a disproportionate number of Engineering and Computer Science graduates and make up over half of the working age population with a university degree in STEM (Picot & Hou, 2019). Racialized applicants were most likely to be in STEM disciplines while LGBTQ and those applicants identifying as having a disability were more likely to be in the Humanities/Social Sciences.

At the same time, based on the research, most WIL positions appeared to cater to students from Business and STEM disciplines. This reflects the general trends in the Canadian labour market where there is a movement towards tech-based jobs (Shortt et al., 2020). The fact that the majority of WIL positions were for Business and STEM students and that certain diverse groups are underrepresented in these disciplines demonstrates that there are structural forms of exclusion occurring in the WIL placement ecosystem. For example, women WIL applicants were less likely to be in Business or STEM disciplines and the majority of WIL postings target these disciplines illustrates there is a systematic exclusion of women from WIL programs. This is also the case for LGBTQ applicants and applicants with disabilities.

Studies show that co-op programs are positively associated with labour market outcomes, including wage and full-time employment. However, those benefits vary by field of study. For example, co-op experiences in arts and education are not associated with an advantage in the labour market with respect to income. Additionally, co-op program participation differentiates after-graduation income for immigrant, visible minority, and female university students (Wyonch, 2020). Diversifying the WIL opportunities available in various fields for diverse groups will provide equal opportunities for all students. Simultaneously, it needs to be careful when we expand WIL programs to new fields of study because a WIL program may not be necessarily valuable to some disciplines as the same as engineering if we simply extend the program as a pre-existing format (Wyonch, 2020).

It should be noted that the majority of recent immigrants to Canada are racialized (Statistics Canada, 2017). The results also indicate how the WIL programs may be helping certain diverse groups. For example, most WIL postings in STEM could mean that the WIL programs may help racialized minorities close the employment gaps they face in the labour market. Moreover, racialized minorities

are not a homogenous group and, therefore, some groups may be overrepresented in STEM while others may be underrepresented, which would mean that the WIL programs may be benefitting certain members of racialized groups.

For most WIL programs, high GPAs are required to participate. This can have negative consequences for students from low socio-economic backgrounds. Studies have found that GPAs are linked to socio-economic status, including family income and parental education (Geiser & Santelices, 2007; Sirin, 2005). Therefore, GPA requirements for WIL placements can affect the participation rates of students from low socio-economic backgrounds. Moreover, research shows that Black, Latino, and Southeast Asian students had lower academic achievement, more special education needs, and lower participation in academic-stream courses (Robson, et al, 2018). Hence, the GPA requirements for WIL positions can limit participation from particular members of diverse groups. Perhaps criteria other than GPAs should be used when assessing the suitability of candidates for WIL programs.

The majority of applicants in the sample live entirely in large urban areas, and most WIL postings are in predominantly urban areas. This can pose a challenge for students living in rural areas. As seen in the interview data, two out of 11 employers indicated having difficulties accessing Indigenous participants who tend to live in rural communities. Moreover, the applicant data showed that Indigenous applicants were heavily underrepresented in WIL programs. Therefore, WIL programs need to ensure equitable access for those individuals from remote communities. Some of the WIL programs accept students who work remotely (York International, n.d.). To encourage participation from members of diverse groups and in order to not exclude some groups, remote access to WIL will need to expand particularly for those living in rural communities. Since a large proportion of current WIL programs have had to pivot to remote work settings during the COVID-19 pandemic, it may be a good opportunity to expand the virtual WIL capacity for diversity and inclusion purposes.

Systemic Barriers at the Organizational Level

Interviews with WIL employers showed that organizations are aware of the importance of hiring diverse students, and there were concerted efforts by individuals to diversify their workplaces. However, the hiring systems, processes, and supports for WIL students from diverse groups were not organized or well-developed in most cases, and each organization had a different level of commitment to EDI. Some employers utilized the existing HR system, and diversity mandates fell under an already strained HR department. As formal diverse hiring policies and strategies are not in place for WIL students, employers dealt with EDI and accommodations on a case-by-case basis. HR professionals act as a gatekeeper to set the conditions and/or influence students' access to the WIL programs. They exclude and include candidates based on individual judgments and preferences (Mackaway & Winchester-Seeto, 2018). Mandating diversity and inclusion and having formal institutional strategies, policies and plans can provide much-needed transparency and demonstrate a clear commitment to EDI and fair access to WIL. Organizations can consider using the services that allow them to recruit diverse students, such as Magnet, who implements EDI for hiring the WIL students using a matching technology.

Employers indicated that they provided a wide range of skills training to their WIL participants, often skills that were not developed through their university program. In a competitive job market, qualifications and skills are the way to differentiate oneself in the hiring process. One study showed that about 52% of Ontario employers who participated in WIL programs had hired recent post-secondary graduates through WIL (Sattler & Peters, 2012). The criteria considered most important by

WIL employers in assessing applicants included program of study, relevant work experiences, credentials, general work experiences, and participation in WIL at the workplace (Sattler & Peters, 2012).

Policies at the Societal Level

Government funding was helpful for WIL programs as evidenced in many employer interviews. For employers, especially from smaller organizations, lack of funding can pose a challenge to prioritizing diversity and inclusion in WIL hiring. Additionally, since some diverse groups face more barriers to WIL than others, a one-size-fits-all solution will not be effective. Funding should be particularly dedicated to enhancing women and Indigenous participation in the WIL programs. Furthermore, international students are not currently eligible to apply to federally funded WIL, employers are discouraged from hiring them. Rethinking WIL funding requirements is needed to increase international students' participation in WIL, which will also benefit other students and recent graduates. For example, improving the participation of international students will create more diversity in the workplace, which creates opportunities for a more inclusive workplace environment overall.

Since WIL is an effective way for postsecondary students to gain employment experience and necessary job skills, a lack of WIL opportunities for diverse groups may exacerbate existing inequities in the labour market for these groups. It can be said that the skills mismatch found in employment does not happen due to a simple mismatch between skills and job opportunities; it is derived from systemic barriers and structural inequities. Some of the under-skilling and over-skilling occurring to diverse groups might have resulted from limited equitable WIL opportunities offered by educational institutions and employment organizations. Individual-level barriers do not result from students' attributes or personalities. Instead, these barriers arise from organizational policies/practices, government policies, and social dynamics. In order to make WIL programs more accessible and effective, it is critical to understand that factors influence each other across different levels in the system.

This study is not without limitations. First, the quantitative data was provided by Magnet and did not use random sampling. Second, the organizations that interviewees belong to were mostly small employers. Since large companies tend to have more resources and may have more diversity and inclusion policies and services in place, our study results could have limited applicability for larger organizations. Third, these findings only shed light on systemic barriers identified by employers instead of challenges identified by student participants since we did not include data on students' individual opinions. Nevertheless, the findings contribute in the literature to some extent by not only identifying barriers facing students from a structural perspective, but also highlighting the importance of using an ecological approach to understand employers' perspectives as a part of the WIL program system. Finally, the perspectives of educational institutions are absent. Since student participants and educational institutions are main actors in the WIL system, future studies should explore their perspectives.

CONCLUSION

According to the findings based on the perspectives of employers, it appears that there may be a "sorting mechanism" (Cukier et al., 2018, pp. 1-28) within WIL programs, which may be systematically excluding students who belong to diverse groups. While this form of exclusion may be unintentional, it could reproduce social inequality if only some groups reap WIL program benefits while others are excluded. As WIL programs are positively correlated with future employment, providing equal opportunities for all postsecondary students to access WIL programs is needed. Consequently, targeted

support can be beneficial for groups that currently have difficulty accessing WIL programs. Greater access to WIL programs for this population may systematically elevate members of these groups who are normally excluded from labour market participation. The interview participants recognized the necessity for diversity and inclusion in the hiring system; however, the resources to support diverse students are often not well-developed and in other cases, do not exist. Funding for WIL programs and WIL employers is vital to enhancing the participation of diverse groups. Future research will be needed to better understand students' needs for supports and resources in order to improve policies and services.

ACKNOWLEDGEMENTS

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The International Journal of Work-Integrated Learning gratefully thanks the sponsors of the Special Issue on *the practice and research of cooperative education and work-integrated learning in the Canadian context*

About the Journal

The International Journal of Work-Integrated Learning (IJWIL) publishes double-blind peer-reviewed original research and topical issues dealing with Work-Integrated Learning (WIL). IJWIL first published in 2000 under the name of Asia-Pacific Journal of Cooperative Education (APJCE). Since then the readership and authorship has become more international and terminology usage in the literature has favored the broader term of WIL, in 2018 the journal name was changed to the International Journal of Work-Integrated Learning.

In this Journal, WIL is defined as "*an educational approach that uses relevant work-based experiences to allow students to integrate theory with the meaningful practice of work as an intentional component of the curriculum. Defining elements of this educational approach requires that students engage in authentic and meaningful work-related task, and must involve three stakeholders; the student, the university, and the workplace*". Examples of practice include off-campus, workplace immersion activities such as work placements, internships, practicum, service learning, and cooperative education (Co-op), and on-campus activities such as work-related projects/competitions, entrepreneurships, student-led enterprise, etc. WIL is related to, but not the same as, the fields of experiential learning, work-based learning, and vocational education and training.

The Journal's main aim is to enable specialists working in WIL to disseminate research findings and share knowledge to the benefit of institutions, students, co-op/WIL practitioners, and researchers. The Journal desires to encourage quality research and explorative critical discussion that leads to the advancement of effective practices, development of further understanding of WIL, and promote further research.

The Journal is ongoing financially supported by the Work-Integrated Learning New Zealand (WILNZ), www.nzace.ac.nz and the University of Waikato, New Zealand, and received periodic sponsorship from the Australian Collaborative Education Network (ACEN) and the World Association of Cooperative Education (WACE).

Types of Manuscripts Sought by the Journal

Types of manuscripts sought by IJWIL is primarily of two forms; 1) *research publications* describing research into aspects of work-integrated learning and, 2) *topical discussion* articles that review relevant literature and provide critical explorative discussion around a topical issue. The journal will, on occasions, consider best practice submissions.

Research publications should contain; an introduction that describes relevant literature and sets the context of the inquiry. A detailed description and justification for the methodology employed. A description of the research findings - tabulated as appropriate, a discussion of the importance of the findings including their significance to current established literature, implications for practitioners and researchers, whilst remaining mindful of the limitations of the data, and a conclusion preferably including suggestions for further research.

Topical discussion articles should contain a clear statement of the topic or issue under discussion, reference to relevant literature, critical and scholarly discussion on the importance of the issues, critical insights to how to advance the issue further, and implications for other researchers and practitioners.

Best practice and program description papers. On occasions, the Journal also seeks manuscripts describing a practice of WIL as an example of best practice, however, only if it presents a particularly unique or innovative practice or was situated in an unusual context. There must be a clear contribution of new knowledge to the established literature. Manuscripts describing what is essentially 'typical', 'common' or 'known' practices will be encouraged to rewrite the focus of the manuscript to a significant educational issue or will be encouraged to publish their work via another avenue that seeks such content.

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