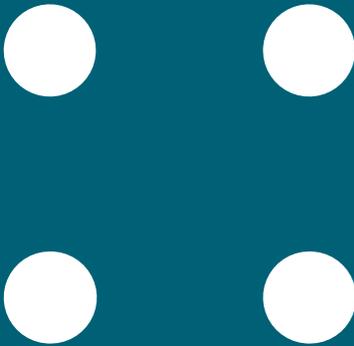


Empowering the next-generation workforce

Realizing talent potential through
work-integrated learning



About Electricity Human Resources Canada

Electricity Human Resources Canada (EHRC) is Canada's most trusted source for objective human resource and market information, with the tools to guide business planning and development for the Canadian electricity industry. We provide a platform for current industry needs, identify ways to make Canadian businesses "best in class," and forecast industry trends and issues. Our work enables the industry to map workforce supply to demand and to foster growth and innovation in employers and employees. This improves the quality of service industry provides and improves the confidence Canadians have in the industry.

Further information on EHRC is available at electricityhr.ca.

Ce rapport est également disponible en français sous le titre:

Impulser la main-d'oeuvre de demain — Atteindre le potentiel des talents par l'apprentissage intégré au travail.

This report also available in French.

The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.



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Meeting Our Sector's Talent Needs

Powerful forces are reshaping the Canadian electricity sector. Energy policies are going green, new technologies are changing the grid, and the workforce isn't getting any younger. Now more than ever, recruiting and retaining people with fresh ideas and the right qualifications is key to long-term success for Canada's electricity sector.

That's where **work-integrated learning (WIL)** comes into play.

WIL is a form of experiential education that formally and intentionally combines academic studies with hands-on experience in a real workplace. That mix of technical and professional skills makes students better prepared to enter the workforce—for the benefit of employers and graduates alike.

People often think “co-op” when they hear about WIL. Co-ops are one form, but just one of many, and each different kind of WIL provides a unique experience and outcome for students, schools and employers.

Recent investments by the federal government and several provincial governments have helped make Canada a world leader in providing meaningful WIL experiences to university, college and polytechnic students. But there's still a lack of understanding among electricity sector employers about what WIL can look like, its benefits and how to take advantage of it.

We're hoping to change that.

To show how WIL is currently being used across the industry, we conducted 19 interviews with electricity employers, post-secondary education institutions, students in WIL programs and recognized thought leaders. Supported by a review of WIL best practices as well as the findings of our *Workforce in Motion* 2017–2022 labour market intelligence study, this paper offers new insights and perspectives on WIL and how it can help meet the pressing labour needs of Canada's electricity sector. It's an invitation to our entire sector to think differently about how to access the skills we'll need for sustainable success long into the future.



Michelle Branigan, CEO, Electricity Human Resources Canada



In an evolving sector, the right people and the right skills are key

Canada's electricity sector is in a constant state of motion.

Federal, provincial and territorial energy policies are shifting power generation away from fossil fuels to non-greenhouse gas-emitting sources such as solar, wind, nuclear and hydroelectric energy. Smart and micro-grids are being built into existing electricity distribution systems and fundamentally changing how energy is stored and delivered. Utilities are working hard to determine how they can support and manage demand for electric vehicles and smart technologies.

That's a lot of change, and in the midst of it, the sector's workforce is turning over.

By 2022, about 20,500 new workers will be needed nationwide¹ to replace retiring electricity workers and meet the demand for service and infrastructure expansion. That amounts to roughly 20% of the current labour force.

So where will this next generation of electricity workers come from?

¹ EHRC, *Workforce in Motion: 2017–2022 Labour Market Intelligence Study*.

The future workforce must be younger and more diverse

Recruitment is going to be key because the sector today is short on younger workers—below the national average for workers under 25 (today, youth make up just 5% of the electricity workforce).²

The need for younger workers is especially prevalent in certain occupations. Roughly two-thirds of utility managers and smart grid specialists are older than 45.³

The older age of the electricity workforce is partly because existing workers are staying on the job longer. Voluntary termination and retirement rates are low (around 2%), with no significant increase expected in the years to come.⁴

At the same time, hiring practices are not keeping pace with Canada's changing demographics. Women, Indigenous people, newcomers to Canada and persons with disabilities are also under-represented groups for the sector.

Recruitment isn't easy

Many electricity sector organizations say it's hard to find people who can integrate quickly into their fast-changing work environments. Certain types of skilled personnel are particularly hard to find, such as information and communications technology (ICT) professionals. To bridge their recruitment gaps, sector employers often bring back retirees as casual employees or contractors—a sign that succession planning may not be in place, and making the recruitment and retention of younger employees even tougher by creating the impression that there are few opportunities for advancement.

In areas like cyber security, electricity employers face stiff competition from other industries and companies with high brand recognition like Google, Amazon, Shopify and Tesla. As well, many utilities continue to rely on legacy systems and platforms: younger workers don't know how to use these and would prefer to be on the vanguard using the latest technologies.

Professional skills are as important as technical skills

"You can be book smart, but if you can't communicate or work in a team, you're not going to be very successful," says Gaby St-Pierre, Director of Co-op and Careers at the University of Ottawa.

In other words, it's not just technical skills electricity employers need: they also increasingly require a broad mix of *professional* skills—in communication, critical thinking, teamwork, time management, problem-solving and more—so workers can "hit the ground running" and bring immediate value.

This applies equally to existing workers and new ones. For example, it's no longer enough to know how to take measurements using a mobile device: workers now need to be able to analyze that data and share their findings with colleagues. There's also more need to interact with customers and be ambassadors of the organization. That extends to technicians installing new equipment in a neighbourhood or performing a service call.

While electricity workers tend to acquire most of these kinds of professional skills on the job, employers are beginning to share their needs with post-secondary educators (PSEs). Yet development of these skills still tends to be largely reactive and *ad hoc* with no systematic planning across Canada.

What's required is a mix of formalized classroom and on-the-job learning to prepare the next generation of electricity workers for the workplace and give employers a steady pipeline of talent to meet their recruiting needs. In other words we need more **work-integrated learning**.



"Digital technologies are being incorporated into the workplace in ways we couldn't have imagined 10 years ago. Nonetheless, students have to continue to focus on more than just technical and technological skills. They also need professional skills: the fundamental skills that everybody needs, no matter what sector they're in or occupation they're seeking."

— The Hon. Carla Qualtrough Minister of Employment, Workforce Development and Disability Inclusion

2 Ibid.
3 Ibid.
4 Ibid.



About work-integrated learning

Work-integrated learning (WIL) is an approach to developing the well-rounded, job-ready talent employers need.

Co-operative Education and Work-Integrated Learning (CEWIL) Canada describes WIL as “a model and process of curricular experiential education which formally and intentionally integrates a student’s academic studies within a workplace or practice setting.”⁵ It requires an engaged partnership between academic institutions, host organizations and students. EHRC agrees with this definition, with the addition that the process also brings the workplace reality into the student’s academic experience and—ultimately— informs the curriculum.

5 CEWIL Canada, [What Is WIL?](#)

WIL takes many forms, encompassing a broad range of programs, opportunities and experiences with distinct benefits and outcomes:

- ▶ **Co-operative education:** Formal programs in which students alternate between academic and paid work terms.
- ▶ **Apprenticeship:** A form of paid, practical experience in a skilled trade or occupation over the course of several years, directed by a qualified individual, with up to 80% of learning happening on the job.
- ▶ **Applied research:** Real-world research and project work that students undertake to address actual needs of industry and community “clients”.
- ▶ **Internship:** A full-time work arrangement of (typically) 12 to 16 months, usually occurring after a student has completed all academic coursework and just prior to graduation.
- ▶ **Mandatory professional practicum:** An unpaid work arrangement in a discipline requiring practice-based experience for professional licensure or certification.
- ▶ **Field placement:** A part-time, short-term, intensive hands-on work experience in a field that does not require professional licensure or certification.
- ▶ **Community service learning:** Meaningful community service integrated with classroom instruction.



What’s in a name?

WIL is also sometimes referred to as work-based learning, experiential learning, practice-based learning, vocational learning and clinical education—each of which has its own specific definition. Arriving at a clear, common vocabulary and definition will make sure employers, educators, students and funding bodies are all “talking the same talk” when it comes to WIL.

Beyond these well-established forms of WIL, new approaches have emerged with the evolving digital economy:

- ▶ **Incubators and accelerators:** Students receive resources, space, mentorship, supervision and/or funding—along with academic credit—for early stage development of start-up businesses that address real-world needs.
- ▶ **Bootcamps and hackathons:** Competitions and events that allow students to develop and showcase their skills, usually in response to real-world industry challenges.

Whatever the format, WIL gives employers direct access to new talent and a competitive advantage—as well as the chance to evaluate prospects and identify potential future hires. At the same time, it helps students develop the habits and skills to succeed in the work world while providing the chance to “test drive” a company or industry.

“It’s a real win-win scenario,” says the Hon. Carla Qualtrough Minister of Employment, Workforce Development and Disability Inclusion. “Students get an opportunity to graduate with work-ready skills, while employers reduce their risk because they can hire somebody they know and have worked with, and then train and mould them in their specific cultural environment.”

WIL is in high demand

A 2016 Abacus Data survey found 89% of students and recent graduates want to see more WIL in their programs, with nearly half (47%) saying there are not currently enough opportunities to take part in WIL.⁶

That’s starting to change. More companies and organizations than ever are entering into WIL partnerships with PSEs. Eighty-three percent (83%) of Canada’s largest businesses reported working with one or more schools to help prepare students for the workplace—up from 76% in 2016—with many of these partnerships meeting the definition of WIL.⁷

Despite the lack of national-level data, the Business Higher Education Roundtable (BHER) estimates about half of all university students take part in some form of WIL during their post-secondary studies. For colleges and polytechnics, the percentage is as high as 70%.⁸

6 Abacus Data, *Work-Integrated Learning and Post-Secondary Education: What Students Think*.

7 Business Council of Canada, *Navigating Change: 2018 Business Council Skills Survey*.

8 BHER, *Taking the Pulse of Work-Integrated Learning in Canada*.

These numbers could be even higher if not for certain barriers preventing employers and PSEs from launching and maintaining WIL programs:⁹

- ▶ **Cost:** For employers, the costs of WIL include student training and compensation as well as time and resources to manage WIL students. For PSEs, there are costs associated with building industry relationships and developing new curricula that incorporate WIL.
- ▶ **Supply and demand:** With student demand for WIL rising, providing an adequate number of placements and spaces is a challenge.
- ▶ **Evaluation:** Because WIL can take many forms (and the terminology used remains inconsistent), it can be difficult to establish benchmarks and assess how well a student is performing in the workplace.

WIL promotes and develops professional skills

One of the most compelling aspects of WIL is that it contributes to the development of the full range of a student's skills—technical and professional alike. While employers may look for a wide array of professional skills in new hires, EHRC has identified a top 10¹⁰ that electricity sector employers are seeking in new hires:

- ▶ **Active listening:** Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as needed and not interrupting at inappropriate times
- ▶ **Speaking:** Talking to others to convey information effectively
- ▶ **Critical thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems
- ▶ **Reading comprehension:** Understanding written sentences and paragraphs in work-related documents
- ▶ **Self-awareness:** Monitoring and assessing one's own performance to make improvements or take corrective action

- ▶ **Social perceptiveness:** Being aware of others' reactions and understanding why they react as they do
- ▶ **Collaboration:** Adjusting actions in relation to others' actions, and knowing how to share and synthesize information
- ▶ **Time management:** Managing one's own time and the time of others
- ▶ **Judgement and Decision making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one
- ▶ **Continuous learning:** Understanding the implications of new information for both current and future problem-solving and decision-making

Just as there are different terms used to describe WIL itself, the labels and definitions of professional skills are not always consistent.

Polytechnics Canada CEO Sarah Watts-Rynard notes this as true for educators as for industry: "There's a sense that professional skills are very important. But what I mean when I talk about these skills might not be what someone else means when they talk about them. We could be speaking the same language but not really understanding each other."

Even the label "professional skills" is not exactly standard. They used to be called "soft skills"—to contrast them with the "hard skills" of technical proficiency and because they tend to focus on human interaction. But "soft" downplays their essential importance to *any* professional occupation, in or outside of the electricity sector.

Some organizations use the term "+skills", which implies these professional skills provide "added value". Others use labels such as basic skills, cross-functional skills, transferrable skills and foundational skills.

In testing by EHRC, "professional skills" resonated more with survey respondents than any other terms.¹¹

9 Ibid.

10 This list excludes skills such as leadership, professionalism and ethics, which are more properly "composite skills" (i.e., a blend of two or more professional skills). For example, professionalism combines time management, social perceptiveness and self-awareness. It is harder to track and measure students' progress in acquiring composite skills.

11 Read our white paper on professional skills, *Skill savvy: Professional skills needs for Canada's electricity sector*, for more: <https://electricityhr.ca/resources/skills-savvy/>.

The responsibility for teaching professional skills

A recurring question today for employers, educational institutions and students is: “Who is responsible for teaching professional skills?”

Should students be expected to enter the workforce with all of the required professional skills fully formed through their time in the classroom? Or can these skills only be mastered through practical, on-the-job experience in a real-world work setting?

It doesn't have to be an either/or proposition. Educators can lay the foundation; the workplace is an excellent environment to put that into practice.

The development of professional skills also isn't limited to school and the workplace alone. There are several other places where professional skills can be acquired and developed, such as through volunteering in community organizations or campus-based groups.

Part of the challenge is helping students appreciate the importance of developing these kinds of skills for themselves—so they can recognize and seize opportunities when they arise.

“You can talk about things like communication in school but for really technical people, it's just fluff,” says Courtney Mann, Talent Acquisition Associate for Fortis BC. “Then they get out into the workplace and see how they need those skills to be successful, and they have that ‘a-ha’ moment.”

Najlaa Rauf, Director of People and Culture at Spark Power, agrees: “While education institutions and employers will provide support in starting their careers, it's really up to the students to embrace the opportunities they have and be engaged in the process. Students that make the most of their placements will go on to see their careers grow and find themselves on the fast track.”



How do you know if someone has professional skills?

One of the main challenges utilities face when recruiting is that students can't fully articulate the professional skills they have or how they've used them in other aspects of their life. While technical skills can be quickly determined when reviewing a student's marks, professional skills need to come out during the interview process—and that can be a struggle.

“We try to assess as well as we can for professional skills, but it really is an art and not a science.”

— Nirav Patel, Director of Human Resources, OPG



The industry perspective on WIL

For employers in the electricity sector, finding work-ready, highly skilled talent continues to be a challenge. Competition for that talent is fierce—and utilities that offer WIL opportunities have a distinct advantage when it comes to building a pipeline of next-generation talent.

Competing for a relatively small pool of new talent, employers who aren't using WIL may find themselves on the outside looking in. The best and brightest students will likely be snapped up and given contracts by those who do offer WIL, sometimes before the students' work placements have even finished—meaning some top-tier talent will never actually be available on the market.

With demand far outstripping supply, it is clear employers need to impress students just as much as students need to impress employers.

CONTEXT

More employers are choosing WIL

Most employers participate in WIL programs to meet financial and strategic goals: to grow their talent pool and access new ideas and research happening in PSEs. They have a vested interest in spending time and resources on training students because they ideally expect those students to come back and work for the company full-time after graduation.

Others see WIL as a way to augment the capacity of their existing workforce. Many WIL students serve as the additional human resources companies need to manage heavy staff workloads—or to get new projects started and the ones in progress over the finish line.

Some participate in WIL for social responsibility reasons: they genuinely want to help the next generation and promote economic development in their communities (and in doing so, improve their own corporate image and social standing). And some see WIL as a way to meet their organizations' diversity and inclusion goals, bringing in people from different backgrounds, cultures and abilities (which may not be possible by hiring only from within).



“When we need additional resources for a project, our first option is to get a co-op student. They help us get things done that would have otherwise been pushed to the backburner.”

— Courtney Mann, Talent Acquisition Associate,
Fortis BC

Approaches to WIL vary widely

WIL students can be found throughout electricity sector organizations. Some companies bring them on for clerical/administrative tasks in a department related to their studies, which can include engineering, finance, human resources and communications. This frees time for the regular staff in those departments to take on more important work.

Other companies have students contribute to bigger projects with major deliverables, timelines and expectations. At some utilities, co-op students work across the entire electricity system from generation to transmission to distribution. Students may also participate in projects related to electric vehicles, smart meters and solar energy. Others work on regulatory, finance and other corporate services work critical to company success.

At Spark Power in Ontario, students work on a mix of junior-level activities while gaining exposure to large-scale projects. That mix keeps them engaged over the course of the placement—and shows students their work is valued by the company.



Portrait of a next-generation electricity sector worker

Utilities expect several things from WIL students no matter what role or position they're given. Curiosity and an innovative mindset are key. So is bringing fresh perspective to old problems or processes—not accepting “because we've always done it that way” as a valid answer. Sector employers also say they need WIL students to be resilient and capable of handling stress, high expectations and a fast pace of work, with the flexibility to work across multiple branches/divisions of the company. At the same time, employers need students to be adaptable and open to doing things differently than they learned in school. Finally, employers know WIL students want to be valued and respected: in turn, they expect students to recognize those things need to be earned.

Co-ops are the most common model

For the most part, electricity sector employers prefer traditional **co-ops** and **internships** for WIL programs. Within the co-op model, **rotational co-ops** have been quite successful. Students stay with the same company for two to four years, alternating between full-time work terms (often four to 12 months long) and school terms. With each new work term, the student is placed in a different team or department, learning multiple functions. This provides a more holistic understanding of the industry along with a variety of hands-on training experiences to improve both their technical and professional skills.

The rotational model allows employers to develop “homegrown” talent, affording more time and opportunity to assess students in a variety of settings and situations and determine if a prospect is a good long-term fit. Chances are, following a rotational co-op, they will be: students hired afterward have a much higher retention rate than those without the same experience. (At Fortis BC, the retention rate is 98% for long-term co-op students compared to 70% for students with one-off placements).

“If we’re investing in somebody for four years, we want them to stay for the long haul,” says Fortis BC’s Courtnay Mann.

SPOTLIGHT: Dev Degree

The Dev Degree program—a partnership between Carleton University, York University and Shopify—is an excellent example of how the gap between classroom studies and on-the-job knowledge can be bridged.

From day one, computer science students enrolled in this program work on development teams at Shopify in parallel with their university studies, rather than alternating terms in the classroom and the workplace, earning academic credits for the work they do at Shopify. When they graduate four years later, they’ll have accumulated more than 4,500 hours of real-world work experience while receiving a competitive salary.

In the first year of the program, students are educated in high-demand tools, technologies and practices, not just at Shopify but throughout the entire tech industry. Over the next three years, students are placed with development teams for eight months at a time, including over the summers, where they solve real problems and work on real software across the areas of software engineering, computer science and entrepreneurship.

BENEFITS

WIL increases employers' access to talent

One of the many benefits of WIL for employers is better and broader **recruitment**. In the short term, it provides cost-effective access to high-quality employees with fresh ideas and infectious energy who can help launch and advance projects that may not have been staffed otherwise. This is especially true when WIL programs are funded and incentivized through wage subsidies.

Over the long term, companies build a direct pipeline of potential employees. Each WIL placement serves as an extended interview with prospects in a “try before you buy” situation to see if the student will be a good fit and how their skills align with the needs of the business.

Brien Convery, Director of Early Talent Acquisition, Attraction and Engagement at Royal Bank of Canada (RBC), noted his organization uses this approach to establish candidate “personas” based on skills such as communication or problem-solving as well as where their passions lie and the nature of their character. In this case, someone who is a good talker and can also solve problems on the fly may be well-suited to a client-facing role with the company in the future. In this light, WIL opens the door for a new approach to evaluating candidates that has less to do with what’s on their resumes and more about their *potential*.

Beyond the bottom line, students also bring an infusion of **innovation and creativity**. They offer fresh perspectives and can look at systems and processes through a completely different lens, resulting in new ideas and new ways of thinking. This often leads to projects being pitched and led by the students

that could add genuine value to the business by generating IP or creating solutions to once seemingly intractable problems.

A possibly unanticipated benefit comes in the form of **professional development and knowledge transfer** for existing employees. WIL should and can be a two-way exchange between mentor and mentee; in some cases, senior employees can learn as much from the students they train and manage as the students do from them, especially when the students “show them the ropes” on the newest software and apps. And if an employee proves particularly adept at mentoring, that may open the door for all-new leadership development opportunities.

Finally, there may be benefits related to **regional economic development**. If a utility is preparing to overhaul or construct new electric generation infrastructure, it can do so only if there is a local labour force in place to support the project. Utilities and nearby PSEs can plan for these major infrastructure projects years in advance, putting in place WIL programs, modifying curricula and even constructing new learning spaces to ensure that when the time comes to break ground, the right skills will already be in place.



“There’s so much we can learn from this generation that previous generations didn’t have access to. Every two months there’s something new.”

— Brien Convery, Director of Early Talent Acquisition, Attraction and Engagement, RBC

SPOTLIGHT: Bringing fresh thinking to Canada’s utilities

Many utilities say the little things students bring to a WIL placement can go a long way. Fortis BC Talent Acquisition Associate Courtney Mann recalls a co-op student who was an “Excel guru” and created a spreadsheet with VBA macros to automate previously manual calculations. As a result, other co-op students no longer had to be trained to do those calculations, freeing up time to work on more interesting projects. Because the more experienced engineers would not have had time to build such spreadsheets, having a WIL student in place was an ideal way to accomplish the task.

Nirav Patel of Ontario Power Generation (OPG) has a similar story. A student in the communications department saw opportunities to boost the company’s social media presence compared to other utilities. “It wasn’t what they were hired to do,” says Patel, Director of Human Resources, “but it’s what they ended up gravitating toward because they could see we were weak and needed help—and we’re still benefitting from the changes and recommendations they made.”

CHALLENGES

Lack of awareness and resources are among the top barriers to WIL

Some utilities **lack a clear understanding of WIL** and what it means to be involved in a partnership with a PSE. Others express doubts about the return on investment they'll see through WIL, arguing that existing employees will see their own productivity go down due to the time spent training and monitoring the students. There's also the issue of **capacity and resources** required to run an effective WIL program.

Large employers may be very good at providing WIL opportunities because they see the value in ensuring their pipeline remains strong. OPG, for example, often has upwards of 400 students working at any given time, from many different programs and backgrounds. In those cases, there's often a team to support the students and give them a meaningful work experience. Smaller employers may have less financial or structural capacity to monitor and mentor. Wage subsidies such as EHRC's Empowering Futures Program help provide that capacity, ideally giving organizations the opportunity to establish a sustainable way of supporting WIL opportunities even after the stipend goes away.

It must also be acknowledged that utilities are often **unionized workplaces**, and that any successful WIL initiative needs to involve and have the agreement of the union.

Utilities also struggle to **raise awareness among youth** about the opportunities available in the electricity sector. Many young people imagine working at cool high-tech firms and don't see utilities in this way. Others are simply unaware of the career options available. More work must be done to promote new technologies being used across the sector and the benefits offered to the people who work in it. Again, WIL helps: when students experience what it's really like to work in the sector, they can go back to campus and act as ambassadors, helping "mythbust" misperceptions or incorrect ideas received from parents and other influencers.

"It's not just about the salary you can offer," says Bob Eichvald, Associate Director of Co-op Programs and Partnerships at York University. "I think the sector has to freshen up its image and somehow infuse some of the youthful branding and other perks that are associated with the top high-tech companies."

Because the sector is **competing with other sectors** and industries for a finite talent pool, it can be hard to create a fully realized WIL program. Electricity companies have to move fast—in some cases, faster than preferred—because if they wait too long to crystallize their relationships with educational institutions, develop schedules and curricula, and initiate the interview process, "superstar" candidates will have been scooped up by companies in other industries. WIL needs to be championed as a top priority inside electricity organizations, with action taken months before they want to bring in students.



"Investing in WIL is a smart move that reaps major rewards: students get hands-on, relevant experience while they learn; employers gain access to the skills and innovation mindset of young talent; and post-secondary institutions build stronger connections with industry and their communities."

— Valerie Walker, CEO,
Business/Higher Education Roundtable



The educator perspective on WIL

For Canada's post-secondary education institutions, WIL is more than just something "nice to have": it's increasingly crucial to their long-term sustainability and success.

PSEs are under unprecedented pressure to perform. In Ontario, the provincial government plans to implement performance-based funding with a portion of the money allocated to colleges and universities tied directly to outcomes, including the number and proportion of graduates in programs with WIL and the proportion of graduates employed full-time in fields related to their studies.

That doesn't mean schools should hastily build up or expand WIL programs. The WIL experience has to be a deliberate and structured part of the educational process, carried out and evaluated just the same as any classroom-based curricula. Quality WIL remains critically important.

CONTEXT

A strong connection to curricula is key

For WIL to be successful, it has to include specific links to a program's curriculum: students are being trained and coached on concepts and tools they'll need to graduate, and they'll come back to the classroom to reflect on their experiences in the workplace. It's a very contractual relationship, so educators need to ensure their industry partners and the students themselves are fully aware of the expected outcomes.



"For every outline for every course we teach, faculty have to identify whether the essential skills are being taught, assessed or reinforced."

— **Kristine Dawson, Director of Co-operative Education, Career Services and WIL, Conestoga College**

"When an institution is creating a WIL program and developing its curriculum, designing around enrolment rates, prerequisite accreditations and other elements must always be done in consultation with employers," says Christine Trauttmansdorff, Vice President of Government Relations and Canadian Partnerships at Colleges and Institutes Canada.

Practically, that means putting together a committee of representatives from faculty and employers to regularly discuss changes being seen in the field (whether in technology or in the labour market), the impact those changes might have on the WIL curriculum, and the WIL opportunities that are best suited to meet the needs of employers. This ensures the WIL being offered stays relevant and in step with the sector's evolving operational environment.

For example, in a WIL program serving the mining or forestry industry, the PSE and the employer might talk about new mines coming on stream and how they will affect the labour market requirements in the region. That information would then go back to the program manager so it can be properly reflected in the curriculum. The same would be true in electricity for an organization looking to build a wind or solar installation and needing software developers.

SPOTLIGHT: Reskilling auto-sector employees in Oshawa

When General Motors announced it was shutting down its assembly plant in Oshawa, Ontario, the region's educational institutions came together to help displaced auto workers get the skills they would need to find new jobs and new careers.

A consortium consisting of Durham College, Fleming College, Trent University and the University of Ontario Institute of Technology announced they would provide courses to retrain and upskill the workers so they can be available for jobs related to the refurbishment of the Darlington nuclear power plant, one of the country's largest infrastructure projects. Durham College will also establish a confidential online portal to help auto workers find job openings.

PSEs are looking to collaborate with companies that can manage and mentor their students well, including facilitating site visits and completing reports at the end of the work term. They also need different kinds of industry partners to accommodate the requirements of different kinds of WIL. A mandatory practicum, for example, needs to be directly related to the student's academic discipline, with the employer providing onboarding along with mentorship and supervision in support of specific learning outcomes.

A co-op for a liberal arts program on the other hand, might not be related to a student's discipline but will provide a safe environment in which the student can grow and develop a variety of professional skills.

Ultimately, these things hinge on an employer's willingness to be a core part of the student journey. Educators need to stress to employers that WIL can't be a one-time deal just to hire a new person: it requires a long-term relationship to ensure all parties can make the most of the opportunity.

Innovative WIL models are being used by PSEs

Like employers, co-ops tend to be the largest and most rigorously managed WIL programs among PSEs. That said, a variety of approaches to implementing WIL and developing professional skills are being used quite successfully. In Ontario alone, several examples exist:

- ▶ At the **University of Toronto**, engineering students must complete 600 hours of practical experience before they can graduate—and are strongly encouraged to participate in full-year placements during their studies.
- ▶ **York University** co-op students are always given real jobs, not “placements”—with employers going through a full, competitive hiring process to determine who they take in. And in 2016, the school completely redesigned the building that houses its engineering program, eliminating traditional lecture halls in favour of small “Silicon Valley”-style labs and having teams of fourth-year students complete capstone co-op projects in collaboration with industry partners.
- ▶ At the **University of Western Ontario**, students in all engineering streams are required to take courses on communications, helping them develop the skills needed to deliver presentations to industry professionals, write effective reports and perform well in a job interview.
- ▶ **Georgian College**, is a recognized leader in student work experience and has incorporated WIL into every program of study to ensure students are exposed to the right mix of professional and academic skills to be successful in the workplace. A particularly innovative approach is Georgian’s partnership with Alectra. The utility invested in research, innovation and commercialization space at the college so students in our engineering and environmental technologies programs can work directly with industry partners on applied research projects and other real-world opportunities that will enrich their academic experience and strengthen their resumé.
- ▶ The **University of Ottawa** offers training to students in a variety of skills that fall under “competency” categories such as business savvy, personal management, collaboration, communication, critical thinking and innovation. (For example, the “personal management” competency covers skills like wellbeing, self-awareness, professionalism, time management, accountability, adaptability and emotional intelligence.)

SPOTLIGHT: Waterloo’s commitment to WIL and professional skills

In 1957, the University of Waterloo was the first school in Canada with a co-op program. Today it operates the largest co-op program in the world, with 70% of its students participating. All co-op students are required to take professional skills courses, choosing from 15 online courses on communication, teamwork, problem-solving, conflict resolution, ethical decision-making and more. The idea is to provide bite-sized modules students can complete on the weekend and apply when they go back to work on Monday.

“We believe these skills are critically important,” says Anne-Marie Fannon, Director of Professional Development at the University of Waterloo. “But they can be enhanced by providing guidance to students while they’re engaged in these work environments.”

While co-op is definitely the university’s dominant form of WIL, other models are also being used. Students in applied health sciences regularly engage in practicums and internships. Waterloo also recently launched EDGE, an opt-in experiential education certificate program that gives students in non-co-op programs the opportunity to participate in workshops and capstone projects so they can develop professional skills and market themselves to employers.

BENEFITS

WIL contributes to stronger outcomes

By participating in WIL, Canada's PSEs are able to **develop offerings that better meet the needs of people and businesses** in their communities. By forming and fostering strong connections with industry partners, educators can engage in constant dialogue to ensure their WIL curricula stays accurate and relevant to employers' requirements. Feedback on each placement from the employer and the student can be used to inform changes to the program. For example, were students adequately prepared? Did their curricular experience line up with the reality of the workplace?

Similarly, performance indicators such as graduate employment rates can be used to make programming adjustments and ensure students are well positioned to build professional networks and get into the talent pipeline.

Successful WIL programs can also significantly **improve a school's reputation**, which in turn can lead to **an increase in student enrolment**.

According to Abacus Data, there is a strong link between student satisfaction and the availability of WIL opportunities. Some 97% of recent grads with a lot of WIL experience say they were satisfied with their post-secondary experience compared to just 75% of those who did not participate in WIL.¹²

SPOTLIGHT: Ottawa's "Education City" initiative

Education City, a partnership between Carleton University, the University of Ottawa, Algonquin College and La Cité Collégiale, aims to develop more integrated "stackable" academic programs and shared research shops among the city's PSEs.

Through the initiative's collaborative workshops, the four partners are already working on a project to help build pathways to meaningful employment for students with disabilities, and are discussing ways to better combine college and university education to deliver more "problem-based learning" that exposes students to a range of disciplinary perspectives.

The group is also looking at the idea of multi-institution programs built around the fundamental skills and experiences students will need to work in a range of related fields.

12 Abacus Data, *Work-Integrated Learning and Post-Secondary Education: What Students Think*.

CHALLENGES

Low engagement and poor understanding can be obstacles

Whether a WIL program is successful or not depends largely on the level of **faculty engagement and enthusiasm**. Among the educators surveyed by BHER, there was the perception that WIL would increase their workloads without providing sufficient compensation.¹³



“We all need to do a better job of understanding each other’s reality. It’s time to move beyond finger pointing and start working together on collective action.”

— Paul Davidson, President, Universities Canada

There also are variances in the **understanding of WIL** across different levels of PSEs. While professors will quickly grasp the differences between WIL and a summer job, deans and administrators may need more of a push to be more receptive to WIL and the benefits it can offer.

“We have to make sure we remember that quality placements have well-designed learning outcomes and are linked back to the curriculum,” says Paul Davidson, President of Universities Canada. “The downside risk is this becomes just another subsidized summer job program. Those are fine, but they’re not what we need right now.”

Similarly, **students may not fully recognize the value of professional skills**—or even be aware of the skills they’re developing in the classroom. Educators need to be more explicit and purposeful in stating why these skills are important—and really connect the dots between what is being done in the classroom (e.g., group presentations) and what employers will demand from students in the workplace (e.g., communications, teamwork, active listening).

There may also not be enough opportunities for students to discuss the progress they’re making and the challenges they’re experiencing when it comes to these skills.

Another barrier lies in the fact that **academia and industry operate in two different worlds**. Employers and schools can mean different things by terms like “soon” and “quality”. Finding consensus is essential, as is striking a balance between the needs for action and for evidence—at a pace that satisfies employers without terrifying educators.

Finally, many small and mid-sized PSEs struggle with the **time, resources and other costs** required to do WIL well.

“There are institutions that are budget strapped and looking for any competitive advantage to maintain or increase enrolment,” says Valerie Walker, CEO of BHER. “If we can move to a system that allows for more creative types of WIL, we’ll provide more benefits to more classes, students and professors over the long term.”

13 BHER, *Taking the Pulse of Work-Integrated Learning in Canada*.



The student perspective on WIL

Students are an important pillar of—and partner in—any successful WIL experience. They receive many tangible benefits from these opportunities, including the best possible preparation for the workplace.

“WIL matters because it’s a chance to put the proof in the pudding,” says Sarah Watts-Rynard of Polytechnics Canada. “Students have spent all this time learning the technical skills. Now it’s time to take that experience from the classroom and see how it gets applied in the real world.”

CONTEXT

Students want to test what they've learned

For Zoe Fox, an engineering student at the University of Western Ontario who completed a four-month internship at Hydro One, WIL was a way to meet other women in the industry and make new connections to help start her career. She also looked to WIL to provide opportunities to practice and improve a wide range of professional skills, such as communications, problem-solving and critical thinking—and see how those skills are applied differently in the classroom compared to a professional workplace.



“It’s one thing to hear about something in school—but to actually see where the theories can be put into practice and applied to the workplace, it then makes things so much easier to understand once you go back in the classroom.”

— Elizabeth Osborn, psychology student, University of Guelph; intern, Spark Power

That was echoed by Natalie Tleel, a University of Toronto mechanical engineering and artificial intelligence (AI) student who spent 14 months at OPG between her third and fourth year of studies. She said her WIL experience provided a completely different perspective on the formulas and theories she learned in class—and gave her the opportunity to see how AI, blockchain and other emerging technologies and innovations are actually being used in the electricity industry.

“We hope our students not only get improved knowledge about what they’re studying but, with true reflection of what they’ve learned in the work environment, they also become better individuals,” says Gaby St-Pierre of the University of Ottawa. “That way, when they graduate and decide on a career path, they won’t fall into the first job they come across. They’ll have more options and more chances to try things out.”

BENEFITS

Real experience and stronger skills give students an advantage

First and foremost, WIL allows students to get **real-world work experience in the sector they’re studying**. It helps them accelerate their learning because they can finally put into practice everything they’re learning—while also seeing firsthand how the business world compares and contrasts with the classroom.

In turn, that experience contributes to **significant skills development**. For example, Zoe says she learned far more than she expected during her time at Hydro One—and while she needed “a tonne of guidance” at the start of her internship, by the end she felt competent enough to do the tasks expected of an engineer every day.

In a survey of 1,000 Canadian undergraduate students, Abacus Data found those with a lot of WIL experience felt much better prepared to enter the workplace and are more confident in their ability to succeed when compared to those with no WIL experience at all:¹⁴

SKILL	% OF STUDENTS WITH A LOT OF WIL WHO FEEL PREPARED	% OF STUDENTS WITH NO WIL WHO FEEL PREPARED
Being able to work in a team	90%	61%
People skills	79%	46%
Making presentations and speaking in public	77%	45%
Being able to lead a team	72%	33%
Being creative	72%	43%

Zoe said she came away from her WIL experience with several references from professional engineers that will help **unlock other opportunities in the electricity sector**, wherever she ends up working.

14 Abacus Data, *Work-Integrated Learning and Post-Secondary Education: What Students Think*.

WIL also gives students a **stronger sense of the career path they may want to pursue** after they graduate, especially if given a chance to explore different roles and teams within one company. They can discover what they like, what they have a real aptitude for doing and what it will take to transition into the workforce, all of which provide much needed academic clarity and motivation. In some cases, their WIL experience might even make them realize that a certain type of occupation or workplace won't be the right fit for them at all.



88% of students believe those who participate in some form of WIL before graduating have a distinct advantage when it comes time to find a job.

86% think those with WIL experience can transition more easily from school to career.

"It really is a chance for students to 'test drive' their career options," says Kevin Weaver, Vice President Academic at Georgian College. "They gain a much better understanding of their future and what other areas of the industry they'd like to explore."

Because many WIL positions offer students a salary, they're a great source of income to **help pay for school and living expenses**. And once students finally graduate, those who have participated in WIL programs are **more desirable to employers** due to their real-world industry experience. If they're applying at the same company where they did their placement, they often shoot up to the top of the list to be interviewed because they're already familiar with the work environment and the tasks to be performed.

88% of students believe those who participate in some form of WIL before graduating have a distinct advantage when it comes time to find a job, while 86% think those with WIL experience can transition more easily from school to career.¹⁵



"It costs a lot to leave people behind. When we invest in everyone's success, tap into an underutilized labour pool and work with partners like EHRC, that's when our economy really starts to thrive."

— **The Hon. Carla Qualtrough Minister of Employment, Workforce Development and Disability Inclusion**

"An engineering student who can come out with both technical and professional skills, they have a ticket because they're needed everywhere. It opens up a lot of doors," says Bob Eichvald, Associate Director of Co-op Programs and Partnerships, York University.

WIL also helps **open up opportunities for students from under-represented groups**. A person's ability to advance their career still largely depends on who they know—but Indigenous peoples, newcomers to Canada, people living in remote communities and many others are unlikely to have the same access to professional networks as others in Canada's electricity sector. By participating in WIL, it gives those students a chance to form those networks and see themselves working in a setting that may never have been illustrated to them by their families or communities.

More broadly, WIL helps reshape how students think of themselves as prospective workers: not as *applicants* so much as *candidates*.

"Students have been told just to apply everywhere, but that won't work anymore," says Brien Convery, RBC's Director of Early Talent Acquisition, Attraction and Engagement. "Being an applicant is not the same as being a candidate. Through WIL, students can differentiate themselves and show their breadth—and learn what it takes to become successful candidates."

15 Ibid.



Conclusion and recommendations

Work-integrated learning (WIL) has the potential to meet the needs of electricity sector employers, educators and students alike. So what can be done to optimize the opportunity for all three groups—especially as the nature and demands of work continue to change?

Canadian companies know the skills and talent they need to thrive in a global marketplace amid the challenges of the aging workforce, new technology and other factors of disruption. WIL is a mechanism for organizations in all sectors, including electricity, to address the workplace transformation underway. It gives future workers direct exposure to the changes happening now—and employers' expectations associated with them. It produces well-rounded, confident graduates, fosters direct connections between post-secondary institutions and employers, and ensures curricula reflect real-world requirements.

For Canada's electricity sector, which faces a talent crunch caused by mass retirements, new technologies demanding fresh skills, and intensified competition with other sectors for labour, WIL provides a direct pipeline to talented, proven, experienced candidates. It helps educators ensure graduates are job-ready and increases their rates of graduate employment. It raises students' awareness of the full spectrum of skills they need—and Canada as a whole benefits from a workforce that's innovative, productive and competitive.

Recommendations for WIL in the electricity sector

If WIL is to deliver its full potential for Canada's electricity sector, all players—employers, educators and students—need to work together. Following are **five recommendations for action** to help realize that goal:

- 1. GOVERNMENT:** Increase WIL funding to offset risk for electricity sector employers, costs for PSEs, and create more opportunities for students to benefit from WIL.
 - Employers know they need talent and are willing to invest to develop it. Wage subsidies such as EHRC's *Empowering Futures Program* make this easier by offsetting the administrative burden, expense and risks associated with taking on and training students. Funding for educators is equally important, as PSEs need to invest time and resources in building relationships with employers and administering WIL placements. Ongoing government support will help realize the broad economic benefits of a workplace-ready labourforce.
- 2. EMPLOYERS:** Enhance the quality of WIL placements to ensure students gain meaningful, relevant work experience and develop next-generation knowledge and skills.
 - Students need the chance to work on meaningful projects and assignments, take risks and learn experientially. Doing so lets them truly put their academic training and professional skills to the test, identify growth areas and become stronger candidates for employers when they graduate. Employers that provide rich WIL experiences will benefit from greater engagement, deeper talent development and a stronger pipeline of prospective employees.
- 3. EMPLOYERS:** Participate more actively in all forms of WIL (not just co-ops) to develop the electricity talent pool of the future.
 - Co-op tends to be the go-to model for WIL experiences, but applied research, internships, practicums and the like contribute to developing future workers' technical and professional skills. By taking advantage of the full range of WIL forms available, employers will better develop their talent pipeline and educators will prepare more students for the workplace. Provincial and territorial governments have a part to play by ensuring the full range of WIL experiences are given academic recognition.
- 4. EHRC:** Create a WIL forum for the electricity sector to foster collaboration among employers, labour unions and educators—helping WIL initiatives succeed.
 - WIL and skills development are shared responsibilities. A body or forum that helps bring stakeholders together to agree on divisions of labour and alignment of approaches could help optimize WIL experiences, ensuring they are anchored in curricula, tied directly to sector skills needs, and have measurable outcomes.
- 5. EHRC:** Facilitate and participate with CEWIL in the establishment of a common lexicon for WIL and professional skills to help employers and educators get aligned.
 - Better definition of, and broader agreement on, the meaning of "WIL" and professional skills such as active listening, critical thinking and continuous learning will be important to ensure all players are on the same page and seeking common outcomes. Setting an industry-wide standard vocabulary would go a long way toward supporting this.

ABOUT EMPOWERING FUTURES

EHRC's Empowering Futures program is Canada's student work placement program for the electricity industry. Aimed at preparing students for the future of work, the program will create up to 1,985 new WIL opportunities in electricity by March 31, 2022, providing subsidies to employers of up to \$7,000 per student position created.

Industry members say WIL-supporting wage-subsidy programs like Empowering Futures contribute in a tangible way to meeting employer and student immediate needs—and those of the sector overall longer-term.

"People are always asking me how to get a foot in the door at a company like ours," says OPG's Director of Human Resources, Nirav Patel. "What I love about Empowering Futures is that it provides real opportunities for youth to show companies what they can do. And that creates a domino effect: other people within the sector will see the good work these students are doing and will go on to create even more opportunities for them."

Learn more about Empowering Futures by visiting <https://electricityhr.ca/empowering-futures/>

