

The HEQCO

# Skills Consortium: *Interim Report*



Higher Education  
Quality Council  
of Ontario



*An agency of the Government of Ontario*

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# Project Summary



## Transferable Skills, Postsecondary Education and the Labour Market

Ontario's **labour market** is unpredictable — as are student pathways into and through it. Many graduates of Ontario postsecondary education (PSE) programs find themselves [working in different careers or sectors](#) than the one they planned on when they began their journey. While HEQCO can't predict every job-specific skill that students will require after graduation, we can say — with certainty — that today's employers demand **transferable skills** such as **literacy**, **numeracy** and **critical thinking**: skills that also form the basis for effective lifelong learning.

Transferable skills are essential for Ontarians' individual and collective prosperity. Differences in **literacy skills** are the most important determinant of economic growth across countries. A [1% increase](#) in average literacy rates, for example, is shown to increase long-term rates of GDP by 3% per capita. Employer [surveys](#) consistently show a demand for other core skills, such as **teamwork**, **communication** and **problem solving**.

Troublingly, Ontario PSE graduates are not demonstrating, or reporting, that they have honed these skills. HEQCO's [large-scale skills trials](#) revealed that graduating students scored lower than expected in measures of **literacy** and **numeracy**. Students themselves also identify a gap in their skill development. In the spring of 2018, HEQCO [surveyed](#) more than 6,000 Ontario college and university students. Survey respondents reported that they expect to need transferable skills such as **problem solving**, **organization**, **teamwork** and **leadership** to a higher degree than they felt these skills were being developed during their studies.

Moreover, in a recent study on work-integrated learning (forthcoming, 2022), HEQCO researchers found that students and employers were found to have mismatching opinions about student skill development. While 83% of the students surveyed were satisfied with the development of their **critical-thinking** and **analytical skills**, only 50% of employers thought that their students had indeed developed these skills. A similar trend was seen for **decision-making skills** and **interpersonal skills**.

For several years, HEQCO has worked with Ontario PSE institutions to **measure transferable skills** through projects like the [Learning Outcomes Assessment Consortium](#), [The Essential Adult Skills Initiative](#) and [The Postsecondary and Workplace Skills Project](#). Such work has engaged sectoral partners to answer questions like: what skills do we expect PSE graduates to have? And how can we reliably measure those skills? These projects give evidence that transferable skills **can** be reliably measured using validated methods and tools, which is a first step toward improvement.<sup>1</sup>

Now, having identified essential transferable skills and effective measurement tools, we turn our attention to answering the next logical question: "What are effective ways of *teaching* essential skills?"

1. For additional background on HEQCO's work in this area, please review [this summary](#) of our skills measurement research, available on our website under Priorities.

## The HEQCO Skills Consortium

As an extension of our previous work, HEQCO has partnered with eight PSE institutions to form a new **Skills Consortium**, designed to evaluate programs or interventions related to the acquisition, development and articulation of transferable skills — the aptitudes that stand to improve labour market outcomes for Ontario graduates.

The following **Interim Report** showcases the project scope, courses and interventions, research questions, methodologies — and more — of seven successful projects: Centennial College, Fanshawe College, McMaster University (in partnership with University of Toronto: Mississauga and George Brown College), the University of Toronto, the University of Toronto: Mississauga, the University of Waterloo, and the University of Western Ontario. Each institution applied to participate through an RFP process and were selected by an external panel of reviewers.

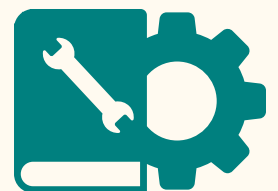
Projects seek to cultivate one or more **in-demand, transferable skills**, including:



- Civic engagement
- Collaboration
- Communication
- Community engagement
- Intercultural intelligence
- Intercultural and social fluency
- Leadership
- Numeracy
- Problem solving
- Relationship building
- Sensitive communication
- Teamwork
- Thriving
- Time management

Projects focus on **innovative educational interventions** that help students acquire, hone or articulate these specific skills. These include:

- Bridging / dual-credit programs
- Co-curricular programs
- Courses
- Digital badges
- Experiential learning
- Work-integrated learning (WIL)
- Microcredentials
- Project-based co-curricular programs



Students will be **assessed** through the following approaches:



- Class assessments
- Interviews
- Focus groups
- Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics
- **NAKPA** (an Indigenous data analysis technique)
- Relatuhedron art-focused reflection (an Indigenous research technique)
- Surveys
- Talking Circles
- Teaching evaluations

Over the course of the project, HEQCO will be releasing relevant updates to the Skills Consortium and monitoring progress. Final products will include a public-facing report that analyzes the educational approaches and targeted innovations, measuring both success and barriers to instilling the transferable skills students need to thrive in Ontario's changing economy.



For more information on this project, see the Skills Consortium homepage, or contact Project Director **Alexandra Macfarlane** at [amacfarlane@heqco.ca](mailto:amacfarlane@heqco.ca) or Project Lead **Lena Balata** at [lbالاتa@heqco.ca](mailto:lbالاتa@heqco.ca).



# The Global Skills Digital Badge: Innovative Interventions to Improve Global Skills for Adult Learners



## PROJECT OVERVIEW



**CENTENNIAL  
COLLEGE**

This project will evaluate the [Global Skills Digital Badge \(GSDB\)](#), a co-curricular initiative at Centennial College that provides experiential learning opportunities for students to learn global employability skills, preparing them to work more effectively in the global workplace.

As a digital 'badge,' the GSDB is also part of an emergent toolset that recognizes ongoing skill development. Digital badges can demonstrate to employers that applicants are agile in the face of fluctuating labour market demands and diverse work environments and committed to pursuing training and education throughout their working lives.

The GSDB is composed of three interlocking learning opportunities: a) *Education* (including workshops such as 'Building Intercultural Intelligence'), b) *Action* (involving community or co-curricular involvement) and c) *Reflection* (an audio, graphic or written reflection on what students learned). These three steps provide students with opportunities to develop key competencies in working across diverse environments. In the final stage, students are introduced to the Global Graduate Toolkit, which is designed to help them showcase global employability skills to prospective employers within the context of an evolving global market.

Students are assessed on one of Centennial College's six [Global Citizenship and Equity](#) (GCE) Outcomes, integrated into 92% of all academic programs as part of [Centennial's Signature Learning Experience](#).

Specifically, this HEQCO-funded project will explore 'Intercultural Intelligence' as a key global employability skill. Intercultural Intelligence is the ability to relate and work effectively across diverse groups and environments. It can be leveraged to help students gain confidence in their own cultural identity; help them acquire a set of skills to demonstrate empathy and responsible citizenship through actions that advance social change; develop strategies that work to address social problems in local and global communities; cooperate and engage effectively in complex situations across diverse groups; enhance their capacity to understand and integrate multiple viewpoints; and think globally to develop innovative solutions to current world issues.

### The project will ask three key research questions:

- To what extent does completing a 'Building Intercultural Intelligence' workshop develop students' 'Intercultural Intelligence' skills for employment in diverse industries?
- To what extent does completing a workshop and experiential learning component develop students' 'Intercultural Intelligence' skills for employment in diverse industries?
- To what extent does completing a workshop, experiential learning component and reflection develop students' 'Intercultural Intelligence' skills for employment in diverse industries?

# METHODOLOGY

To answer these questions, the research team will be taking a mixed-methods approach. This will involve gathering both qualitative and quantitative data, including pre-, mid- and post-intervention surveys that analyze students' development of global citizenship and equity skills throughout their progress in the GSDB. At all stages, the surveys will include questions that evaluate participants' level of 'Intercultural Intelligence' and include a self-assessment of knowledge, personal responsibility, self-awareness and capacity to work across diverse environments. Research participants will include 150 students enrolled in a full-time, two-year program at the college.

During the first step of the GSDB program (*Education*), student participants will complete a baseline pre-intervention survey. After a mandatory workshop on education intervention, students will then complete a mid-program survey. This mid-way check-in will ensure that the research team can capture any changes in 'Intercultural Intelligence' skills made because of the *Education* phase of the program. It will also include a qualitative question asking students to reflect on what they learned during the first component of the GSDB. If participants do not complete the entire badge, the research team can still evaluate key elements of the program. Participants who do not complete steps two and three of the program (*Action* and *Reflection*) will still be included in the study.

Students will complete a post-program survey after the *Action* and *Reflection* phases. Baseline data from the pre- and mid-intervention survey will be analyzed alongside post-intervention data to determine, once again, if there have been shifts in students' 'Intercultural Intelligence' skills over the course of the intervention. Survey progression will be tracked through a student number; changes in skills will be evaluated as the GSDB progresses. Qualtrics software will be used to administer the online surveys, and telephone and hardcopy options will be available for accommodation purposes.

The team will also deploy a Likert scale survey to measure the metacognitive, cognitive, motivational and behavioural dimensions of 'Intercultural Intelligence,' adopting a mixed-methods approach. The Likert scale survey will be used to measure how this form of intelligence relates to cultural judgment and decision-making, cultural adaptation and task performance in culturally diverse settings.

The pre-, mid- and post-intervention surveys draws on components of the [Organisation for Economic Co-operation and Development's \(OECD\) Programme for International Student Assessment \(PISA\) global competence framework](#). The framework was developed by the OECD Secretariat. Numerous countries have participated in PISA with the goal of aligning global competencies with workforce needs.



# The Supportive Care Assistant Program: Skill Acquisition and Work-integrated Learning within a Healthcare-based Microcertification



## PROJECT OVERVIEW



COVID-19 demonstrated just how critical it is to have highly skilled and adequately trained health professionals within the community and institutional teams to care for the most vulnerable people in our society.

In the fall of 2021, [Fanshawe Corporate Training Services](#) began delivering the [Supportive Care Assistant Program](#) (SCAP), funded by [SkillsAdvance Ontario \(SAO\)](#). This [140-hour microcertification program](#) develops and enhances the soft, employable and technical skills required by all entry-level healthcare personnel in the province, ensuring new staff are both productive and valuable members of the workplace. SCAP also provides career mobility opportunities and pathways to further education and training, specifically for personal support workers, registered nurses and registered practical nurses. Target populations for recruitment include unemployed jobseekers and vulnerable populations, such as youth, newcomers, women and Indigenous peoples.

The research team at Fanshawe College seeks to determine if effective skill acquisition can indeed occur in a healthcare-based, microcertification program that also incorporates [work-integrated learning \(WIL\)](#) opportunities. The purpose is to create a better, more valuable program to assist the aforementioned marginalized groups achieve success in their educational and career endeavours.

This study will explore the development of four transferable skills that are key to employment and future career mobility in the workplace: i) Communication; ii) Teamwork; iii) Time Management; and iv) Cultural Sensitivity. These are defined as follows:

- **Communication** is defined as:
  - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
  - Talking to others and effectively conveying information.
  - Reading and understanding written information and ideas.
  - Communicating information and ideas in writing so others will understand.
- **Teamwork** is defined as:
  - Easily adjusting actions when one works with others with different needs, responsibilities, expertise and backgrounds.
- **Time Management** is defined as:
  - Effectively managing one's time and activities to complete assigned tasks/duties.
- **Cultural Sensitivity** is defined as:
  - Engaging clients in conversation, recognizing the importance of traditional teachings, foods, prayer and relationships (with self, family, community and land).
  - Recognizing and accepting the importance of Elders, traditional protocols and medicines, and ceremony for healing and adjusting to life changes.



## The project will pose three main research questions:

- How do student self-assessments of core program skills and competencies align with or compare to objective ratings provided by faculty and employers?
- To what degree does WIL experience, following class-based instruction, improve transferable skill acquisition?
- Is WIL more effective for the acquisition of particular program skills and competencies than others?

## METHODOLOGY

The project team will be using a mixed-methods approach, developing and administering electronic surveys and conducting focus groups to collect and assess student, instructor and WIL employer perspectives on transferrable skills development for this microcredential program.

Students, faculty and WIL employers will also rate core skill acquisition at the student level, varied by time (i.e., pre-program, post-class and post-WIL). This permits the triangulation of responses across groups as a means to assess bias, track change (such as improvement over time) and establish a matrix that normalizes estimates of skill acquisition and establishes validity and reliability of the results.

The surveys will collect the following information from students:

- students' baseline self-rating of the four transferrable skills at the beginning of the formal training period;
- students' interim self-rating of skills at the end of the formal training period; and
- students' final self-rating of skills at the end of the four-week WIL session.

At the end of the formal training period, the team will distribute surveys to faculty and WIL employers. These surveys aim to collect instructor and employer ratings of core Communication and Cultural Sensitivity skills from students in all cohorts.

The team will be supplementing these surveys — yielding quantitative skills ratings — with qualitative data that provide personal and experiential insights into the learning process. Student focus groups provide an additional point of triangulation to confirm, or contextually challenge, findings from the quantitative survey data. The team will be deploying three qualitative research approaches:

- Semi-structured exit interviews with all students leaving the program before completion.
- Focus groups with students (one for each of the four cohorts), faculty and WIL employers at the end of year one of the program.
- Focus groups with program community partners and Program Advisory Committee (PAC) members to collect summative program feedback, also at the end of year one.

# Numbers for Life: Measuring Learning Gains and Exploring the Wider Adoption of Numeracy Curricula



## PROJECT OVERVIEW



This two-year project, conducted in partnership with the University of Toronto Mississauga and George Brown College, will assess the learning and skill development in approximately 350 undergraduate students enrolled in the [“Numbers for Life”](#) course, taught at McMaster University. Using a number of instruments, including pre- and post-test surveys, class activities, course assessments and teaching evaluations, the project will assess students’ acquisition of competencies across three transferable skill domains: i) Numeracy; ii) Critical Thinking; and iii) Problem Solving.

Numeracy involves reasoning about numeric information (data), which can be presented in a variety of ways (such as narrative, graphic or dynamic forms). Inspired by questions routinely asked in mathematics (such as What is this? Why is this true? How do we know?), the team expands numeracy to include critical, evidence-supported thinking, common sense and logical reasoning in situations and/or contexts that do not explicitly nor implicitly involve numbers or quantitative information. All of these concepts are important for the development of critical thinking skills, as well as in building capacity to problem-solve effectively.

Data analysis will inform modifications to and fine-tuning of the numeracy course curriculum to help students improve their level of skill attainment.

**The research questions that the team plans to answer are as follows:**

- To what extent does the “Numbers for Life” course develop students’ numeracy skills?
  - How has their ability to understand numbers (e.g., absolute and relative size, patterns, etc.) and work with numeric information (e.g., to approximate, estimate, scale, visualize, etc.) changed after completing the course?
  - How has their ability to use logical reasoning (such as understanding and creating cause and effect arguments) and recognizing logical fallacies changed after completing the course?
  - How has their ability to engage with multiple step problems, which require quantitative reasoning, changed after completing the course?
  - Are students able to better communicate their answers to quantitative reasoning problems and questions after completing the course?
- To what extent are numeracy skills retained a year after the course is complete?
- How do students’ academic backgrounds, interests and experiences affect the development of their numeracy skills?
- How does numeracy skill development differ between the two student cohorts tested?

## METHODOLOGY

This project will focus on measuring competency at the start and at the end of the “Numbers for Life” course. This team will employ quantitative and qualitative research methods, as well as action research, which, among other goals, is well-suited to inform modifications of the “Numbers for Life” course curriculum and instructional interventions.

The population for this project consists of students who enrol in the “Numbers for Life” course at McMaster in fall 2021 and fall 2022. The student population in this course is truly diverse, ranging from life sciences and engineering students to business and economics majors as well as students in the humanities and social sciences. Based on previous experience, the team expects between 340 and 380 students to participate.

In measuring learning gains, the team does not wish to rely solely on a quantified comparison of pre- and post-test scores; instead, it plans to probe deeper into students’ work to assess how their learning and understanding, as well as skills development, change over time.

The team will use two types of instruments. The first will be modified from existing models, developed by the project leads while researching a different course at McMaster University. This will assure validity and reliability. This model will be used to assess knowledge and skills at three specific temporal points: i) at the start of the course, using a ‘pre-test’; ii) at the end of the course, using a ‘post-test’; and iii) for one cohort of students, one year after they finish the course, using a ‘delayed post-test.’

The second method will use rubrics that will follow a student’s achievement across knowledge and skills competencies, which will be extracted from the research questions. This approach will follow the continuous development of competencies throughout the course by looking at all assessment instruments administered.

To ensure robustness, the team will survey two cohorts of students (in other words, it will repeat the experiment). Specifically, it plans to collect the following data from the sample of consenting students:

- **Course assessments.** These assessments will include online tests and quizzes, administered through a learning management system called Avenue to Learn. Tests will have a knowledge component (i.e., so students demonstrate knowledge of facts, definitions, etc.) and will test problem-solving skills (for instance, though multi-step problems) and other skills (such as the interpretation of a calculation, selecting a narrative that best describes a given quantitative context, etc.).
- **Pre- and post-test surveys.** Course assessments and pre- and post-test surveys will be collected twice, in fall 2021 and fall 2022.
- **Semi-structured interviews** with a small sample of students; these will be conducted twice, in winter 2022 and winter 2023.
- **Retention post-test survey.** The fall 2021 cohort of students will be assessed a year later, in December 2022, on the retention of material and skills.

# The New Respect Cultural Safety Course: Helping Students Work with Indigenous Peoples to Uphold Reconciliation



## PROJECT OVERVIEW



UNIVERSITY OF  
TORONTO

All current undergraduate and graduate students of Nursing, Social Work and Medicine at the University of Toronto will be given the opportunity to complete '[New Respect Cultural Safety](#)' (NRCS): a voluntary, digital, Indigenous-related cultural safety course.

Equivalent in scope to a graduate-level university course, NRCS will be divided into three foundational modules: *Creation*; *Abbreviated History*; and *Contemporary Times*; it will then be followed by three profession-specific modules, one tailored for each of the disciplines mentioned above. The foundational modules will be developed in collaboration with an Indigenous Content Committee composed of Elders, Knowledge Keepers, Senators and other Indigenous community members across Ontario. By combining teachings from First Nations, Métis and Inuit communities, the team centres its work in Indigenous values, beliefs and worldviews that continue Indigenous pedagogies, ontologies and praxes.

The main objectives of NRCS are to address systemic racism against Indigenous peoples by exploring the three Ps — power, privilege and positionality — while asking participants to self-reflect on how these three Ps play a role in their own lives. Participants are also expected to enhance three key skills: i) Culturally Sensitive Communication; ii) Effective Collaboration; and iii) Community Engagement. Collectively, these skills will prepare participants to interact in culturally safe ways, including through active listening and improved communication, and will help students work with Indigenous peoples in a way that respectfully upholds reconciliation.

- Culturally sensitive communication occurs when health professionals recognize the differences and similarities between cultures; it is often seen as a starting point in a learner's journey towards cultural safety.
- Effective collaboration is regarded as the meaningful inclusion and synergistic work among partners for a common goal.
- Community engagement is seen as the comprehensive process of building trusting relationships, involving community members in the work, and fostering open streams of communication; this often involves strong skills in both communication and collaboration.

## This project will ask three research questions (with related sub-questions):

- How have students' knowledge, attitudes and skills related to effective engagement with Indigenous peoples changed following completion of NRCS?
  - How has cross-cultural communication changed following the completion of the program?
  - How has effective collaboration changed following the completion of the program?
  - How has the students' community engagement changed following the completion of the program?
- To what extent are changes in knowledge, attitudes and skills retained by participants three, six and nine months after completion of NRCS?
- What impact do profession-specific modules have on the internalizing or use of Indigenous cultural safety training for nursing, social work, medicine and/or educators (from kindergarten to postsecondary)?

## METHODOLOGY

To answer these questions, the research team will follow a Blended Indigenous Framework. It will work with an Indigenous Advisory Committee (unique and separate to the Indigenous Content Committee) to co-develop talking circle questions and other Indigenous research techniques, such as [NAKPA](#) (Cree-approved photo-voice) and [relatuhedron](#) (an art-focused reflection), in the longitudinal assessment of the program.

Pre- and post-program surveys and quiz responses will be administered to 200 to 500 students and 40 to 75 faculty members across the Nursing, Social Work, and Medicine faculties (faculty departments will also send out an email to all students to garner additional interest in participation).

These surveys will generate both quantitative and qualitative information to determine if the NRCS is meeting the needs of learners as well as the expectations of the Indigenous Content Committee, which represents the Indigenous peoples residing in Ontario currently and historically.

If COVID public health guidelines allow, the research team will hold talking circles where participants will have the opportunity to complete a group-based NAKPA response or *relatuhedron* artistic works in addition to the talking circle discussion.

As mentioned, participants will be asked to return follow-up surveys at three, six and nine months after the course. These will ask for self-assessment in the absence of a test or quiz.

Surveys will use open-ended questions as well as Likert scales. These assessments will ensure that participants have grasped core concepts in a meaningful way and experienced learning and change processes. To assess the impact of profession-specific modules, separate talking circles for each faculty will be held to create environments in which students feel comfortable sharing their experiences.

# The Social Innovation Program: Evaluating Community Based Learning Programs for Transferable Skills



## PROJECT OVERVIEW



UNIVERSITY OF  
**TORONTO**  
MISSISSAUGA

In a national poll of business leaders, 76% of employers wanted colleges to place more emphasis on the intercultural competencies that lead to teamwork skills in diverse groups; 72% wanted more emphasis placed on global knowledge ([National Leadership Council for Liberal Education and America's Promise, 2007](#)). The challenges of the new global economy require graduates who are adept critical thinkers, capable of addressing unscripted problems whose solutions require navigating through and relying on the resources of highly diverse communities ([Jacoby & Ehrlich, 2009](#)).

The [Social Innovation Program](#) at the University of Toronto Mississauga (UTM) is a 16-week, co-curricular, multi-disciplinary and community engaged learning program. It pairs student groups, composed of six to 10 students, with community organizations in and around the UTM community to engage in real-world problem-solving activities. Groups follow a process of [Human-Centred Design](#) and then develop project deliverables for their community organization. The hope is that by participating in this experiential learning program, which provides opportunities for real-world, team-based activities, students will develop workplace-oriented transferable skills while participating in local civic engagement.

The Social Innovation Program is open to students in any year but is targeted at upper-year students in an effort to aid in transferable skill development for their career readiness.

This project will assess undergraduate students' acquisition of competencies from participation. The research team will be assessing four transferable skill domains: i) Teamwork; ii) Problem Solving; iii) Oral Communication; and iv) Civic Engagement. Teamwork refers to behaviours under the control of individual team members (i.e., the effort they put into team tasks, their manner of interacting with others on the team and the quantity and quality of contributions they make to team discussions). Problem Solving is the process of designing, evaluating and implementing a strategy to answer an open-ended question or achieve a desired goal. Oral Communication is a prepared, purposeful presentation designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs or behaviours. Civic Engagement is working to make a difference in the civic life of communities and developing the combination of knowledge, skills, values and motivation to make that difference. It means promoting the quality of life in a community, through both political and non-political processes.

## Research questions for the project are as follows:

- To what extent does participating in a co-curricular civic engagement program affect student skill acquisition?
- Does participation in co-curricular civic engagement programming increase student competency in the aforementioned domains, as measured by changes in self, peer and observer assessment using the [Association of American Colleges and Universities Valid Assessment of Learning in Undergraduate Education \(VALUE\) rubrics](#)?
- How do student self-assessments of skills align or compare to ratings provided by peers and observers?
- What lessons can be learned to either improve the program or transfer effective elements of the program to other contexts?
- Does the Social Innovation Program work better for certain groups of students?

## METHODOLOGY

This project will focus on measuring competency across the four transferable skill domains at the start and end of the Social Innovation Project. Changes in participant skill competency will inform the team whether the Social Innovation Project program, and similar civic engagement programs across other postsecondary institutions, do in fact aid students in developing workplace-focused transferable skills.

To measure skill competency, the research team will use the AAC&U's VALUE rubrics for [Teamwork](#), [Problem Solving](#), [Oral Communication](#) and [Civic Engagement](#). These rubrics have been used internationally in classroom-based applications to measure higher-order learning among undergraduate students for the past 10 years. They have been used extensively across many AAC&U-commissioned research projects.

For the purposes of this two-year study, two cohorts (one in the first year, and one in the second year) of between 70 and 100 students will make up the sample population. This will include students from a variety of academic disciplines as well as a variety of ages.

Data collection will occur in three phases. First, each student will complete a self-evaluation rubric for each of the four skill domains. Secondly, each student will complete a rubric for each individual member in their group, providing a peer evaluation. Lastly, a Research Assistant will complete an objective evaluation using the rubrics. Self-, peer- and observer-rubric scores will be tested for consistency; differences in pre- and post-program scores will be examined to determine change in skill acquisition as a result of program participation.

# Reversing Un(der)employment: A Novel Work-integrated Learning Skills Development Intervention



## PROJECT OVERVIEW



UNIVERSITY OF  
**WATERLOO**

Youth unemployment in Ontario is a serious problem. As of May 2021, an estimated 20.7% of youth aged 15 to 24 in Ontario were unemployed (Statistics Canada, 2021). One of the most troubling consequences of youth unemployment is subsequent 'underemployment' once they do enter the labour market.

Underemployment is a situation in which an individual's training and skills exceed the demands of their job. It's defined as "an inferior, lesser, or lower-quality type of employment" relative to one's past education or work history or those of others with similar educations ([Feldman, 1996, p. 387](#)). Critically, such underemployment — if not addressed early on — worsens over time. It results in even greater difficulty finding work and lower quality work throughout one's career ([Verbruggen et al., 2015](#)).

This project will focus on a work-integrated learning (WIL)-based intervention called [WE Accelerate](#), available to University of Waterloo students participating in co-operative education. WIL integrates academic studies and work-based experiences; these offer opportunities for the development of in-demand skills because they more deeply involve employers than traditional academic experiences.

WE Accelerate participants receive 100 hours of in-demand skill development training, co-created with industry partners, and work in small teams for 120 hours on industry partner-supplied projects. Students also receive support and mentorship from university staff, including from career development educators. It aims to upwardly 'accelerate' students from unemployment to meaningful employment in future co-op work terms.

At the end of WE Accelerate, participants receive a work term credit that helps them stay on track to complete their co-op degree. Based on WIL literature, the team expects that participation in WE Accelerate may be helpful for reducing subsequent unemployment and underemployment in future co-op opportunities.

This project will assess undergraduate students' acquisition of two transferable skills: i) Teamwork and ii) Problem Solving from participation in the WE Accelerate program. Teamwork skills are the actions, attitudes, and behaviours that contribute towards the goals of an organization or group ([Dinh & Salas, 2017](#)). Problem solving skills are the goal-directed actions individuals apply to adapt to stressful demands ([Heppner, 2008](#)).



## The project will ask four key questions:

- How is participation in WE Accelerate associated with unemployment in a subsequent co-op work term?
- How is participation in WE Accelerate associated with underemployment in a subsequent co-op work term?
- What is the role of transferrable skill development in understanding the outcomes (i.e., unemployment and underemployment) of WE Accelerate?
- How do students' demographic backgrounds relate to the dynamics between WE Accelerate and un(der)employment in a subsequent co-op work term?

## METHODOLOGY

These questions will be addressed by studying learning outcomes associated with participation in WE Accelerate — in other words, by assessing the extent to which WE Accelerate contributed to students' skill development.

Participants in the project are youth (roughly aged 17 to 25), mostly enrolled in science, technology, engineering or math (STEM) programs. More than 500 students were enrolled in WE Accelerate in spring 2021. All program participants will be invited to this study. Based on previous work with such students, the team anticipates approximately 300 students will consent to participate in each of the two cohorts.

The project involves a quasi-experimental design. That is, co-op students in the study will be arranged into three specific groups: students who were a) employed, b) not employed and *did not* participate in WE Accelerate, and c) not employed and *did* participate in WE Accelerate. Organizers will compare measures of students' teamwork and problem-solving skills between these three groups at the beginning and ending of the fall term (September to December 2021). The study will be replicated again during the winter term (January to April 2022). One-way ANOVAs will be used to examine differences in transferable skills between those who participated in WE Accelerate and those who did not.

Students' future co-op employment outcomes will be tracked over time and examined to determine how the WE Accelerate program and transferrable skill development impact student unemployment and underemployment.

# The Power Skills Self-Assessment and Career Preparation: Empowering Doctoral Students to 'Own Their Future'



## PROJECT OVERVIEW



Within current PSE curricula in Ontario, doctoral students are not required to articulate their skills and personal strengths. Moreover, well-established and evidence-based career transition workshops, tailored to doctoral students' advanced capabilities, do not exist. This situation hinders PhD graduates' potential to contribute to society more broadly. With PhD graduates working in careers spanning all segments of the labour force (see: [Degrees of Success, Council of Canadian Academies](#)), this perpetuates the outdated — and increasingly inaccurate — narrative that doctoral education should prepare students for an academic career only.

In response, the University of Western Ontario's School of Graduate and Postdoctoral Studies created the [Own Your Future Power Skills Self-Assessment](#) to help doctoral students recognize and articulate their diverse skillsets. In addition, Western's [Careers & Experience](#) team has created new career transition curriculum to help students deepen their academic learning and actively plan for personal and professional growth.

This study will investigate whether completion of the Power Skills Self-Assessment and corresponding three-part workshop curriculum improves doctoral students' abilities to recognize and articulate their skills, thus addressing the curriculum gap and doctoral students' career needs. Specifically, it will investigate students' skills in Communication and Relationship-Building; Leadership; Thriving; and Intercultural and Social Fluency. These are defined as follows:

- Communication and Relationship Building is the ability to explain complex ideas to a variety of audiences, to use appropriate communication tools effectively and to foster positive working relationships.
- Leadership is the ability to apply personal strengths, skills and knowledge with integrity to manage projects and teams, make complex decisions and take meaningful risks.
- Thriving is the ability to promote initiative and accountability through self-awareness and self-assessment, time management, work-life balance and to seek help when needed.
- Intercultural and Social Fluency is the ability to navigate effectively through a complex global world of cultural and social diversity with multiple value systems.

## The project will ask three core questions:

- Does completion of the self-assessment and intervention workshops change students' perceptions of their skillset and skill proficiency — and if so, how?
- Does participation in the program intervention improve students' abilities to articulate their competencies, skills and experiences?
- Based on the study results, what is the best way to transfer the program and content to other institutions, fostering a community of sharing?

## METHODOLOGY

This project will focus on measuring competency across the aforementioned transferable skill domains at the start and at the end of the *Own Your Future* program. This will be a mixed-method, pre- and post-participation study involving 40 senior doctoral students from the Arts, Humanities, and Social Science Faculties.

The study will begin with Meet and Greet session where participants will be introduced to the instructor(s), researchers, and each other. Their personal participation will begin by independently completing a recorded, virtual mock interview and the *Own Your Future* Power Skills Self-Assessment. The mock interview will include the question, "Tell me about yourself" and eight additional behavioural-based questions. The self-assessment will ask students to rate their ability to engage in behaviours and tasks associated with the four skill competencies studied. Following the assessment, students will receive a summary report of their results, identifying their strengths and weaknesses.

Participants will then engage in three workshops plus a networking session with employers (i.e., the intervention itself) over an eight-month timeline. The workshops will address the following topics: i) Using the Power Skills Assessment to Prepare for Future Success (month two); ii) Advancing and Aligning Your Skills (month three); and iii) Articulating Your Skills During the Job Search (month four). Following each workshop, students will be sent a 'tell us what you think' feedback survey.

Following the networking session in month five, they will once again record a virtual mock interview and complete the Power Skills Self-Assessment. Finally, to better understand their experience in the project in relation to their PhD journey and career plans, they will participate in individual conversational interviews with a researcher (month six to eight).

Results will be communicated and shared nationally to contribute to best practices in doctoral student career preparation.



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